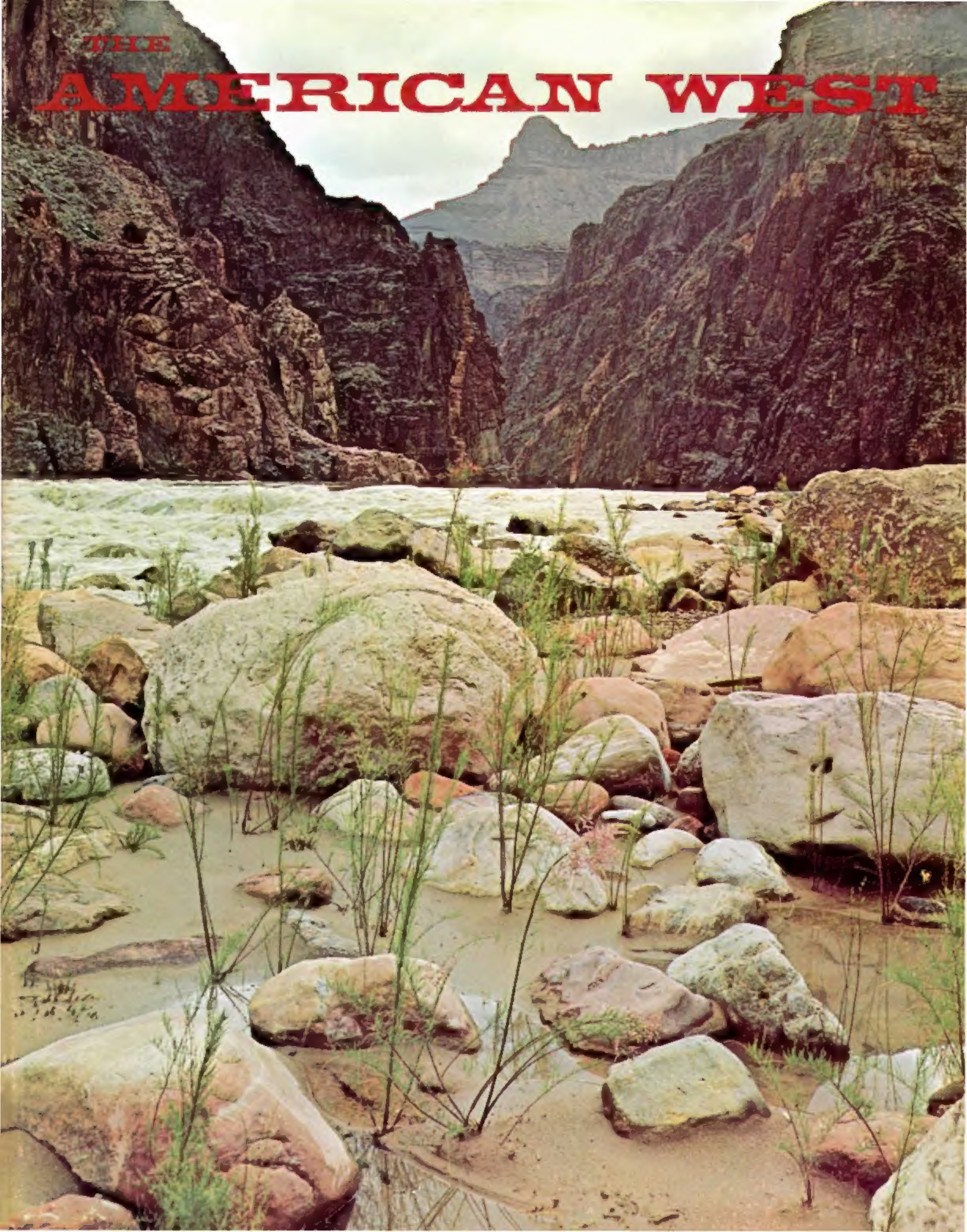
THE
AMERICAN WEST

Cover

The Colorado River
at Granite Falls,
Grand Canyon.
(Philip Hyde photo)

THE

AMERICAN WEST

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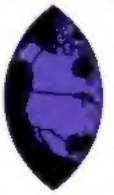

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BRIEF SANCTUARY

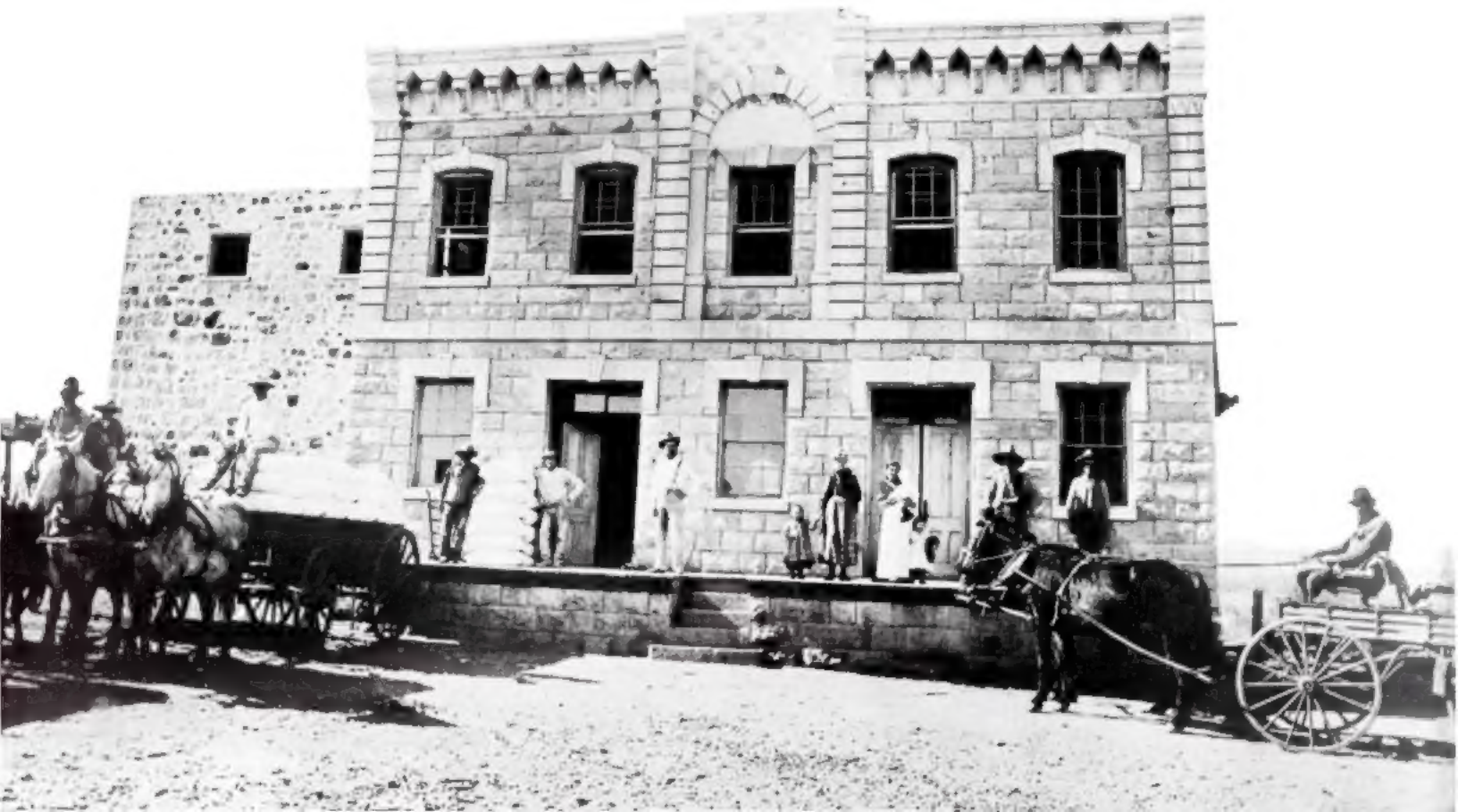
BY KARL YOUNG

The Mormon Colonies of Northern Mexico

South from the border town of Columbus, New Mexico, the Mormon settlements extended like beads on a string all the way to the Sierra Tarahumare: Colonia Díaz first, about sixty miles below the Mexican border; then Colonia Dublán and Colonia Juárez; thirty-five miles farther south, Colonia Pacheco; then Colonia García, and finally Chuichupa. All of these Chihuahua towns lay on the east side of the continental divide, though the mountain towns were not far from the western slopes of the Sierra Tarahumare. Across the mountains, in Sonora, were two other colonies, Morelos and Oaxaca. In name and place the towns were Mexican; but their origins were in the United States, and the story of their foundation was one of the last chapters in the history of the long flight of the Latter-Day Saints.

The history of the Mexican colonies may be said to have begun in 1852, when Brigham Young announced publicly the doctrine of plural marriage. That the Constitution of the United States contained no strictures against polygamy, that it expressly guaranteed religious freedom, that Mormon marriage involved a temple ceremony and held a basic place in the Mormon concept of salvation gave Young and his people a misplaced confidence in their right to offend the mores of an American public not only ignorant of the theological justification of Mormon polygamy but emotionally incapable of accepting it in any case.

Congress responded to popular indignation at Mormon "immorality" in 1862, but the resulting Morrill Act proved an ineffectual bar to polygamy, as prosecution of offenders lay in the jurisdiction of local courts controlled by Mormons. Anti-polygamists succeeded in re-



moving power to the district courts with the Poland Bill of 1874, and enlarged upon this victory with the Edmunds Bill of 1882. With the passage of this last act, polygamy became a felony punishable by as much as five years' imprisonment and a fine of $500.

The Mormons had lost. It was now a question of cornering and capturing the offenders. Officers who before had been thwarted now pressed the chase vigorously. Aided by the empaneling of non-Mormon juries, by the power to imprison wives who would not testify against their husbands, and by the rigor of the sentences imposed upon convicted men, the Federal marshals made life unbearable for many a respected Mormon husband and father. The plight of such a man was further intensified by the interpretation of the law, which made it possible to divide up the period in which the offender had cohabited with his wife into invididual days, and to try, fine, and imprison him for so many separate infractions of the law that his incarceration would prove lifelong and he would die in debt to the state.

Though the Mormons had lost the legal battles, they were still unwilling to yield on what they regarded as Divine law. They went underground. However, even though it might be possible for a single individual to live underground, for a man with families dependent on him it was intolerable. Perhaps one could find relief from harassment in Canada or on the sparsely settled plateaus of Chihuahua. No laws against polygamy existed in Mexico or ever had existed there. Could it not be the sanctuary against marshals and courts? Perhaps for those Mormons who would rather be exiled than imprisoned, peace could be found in one more move.

As early as 1875 a party of ten men, led by Daniel W. Jones, had been sent out by Brigham Young on a six-month expedition to preach the gospel and scout out new sites for settlements in southern New Mexico and northern Chihuahua. After Brigham's death in 1880, John Taylor, the new president of the church, had encouraged Arizona Mormons to send scouting parties into Mexico. Encouraged by reports from expeditionary parties and increasingly harassed by Federal officers in Utah, potential emigrants took to the trail early in 1885, before any firm arrangements had been concluded for the purchase of land in Chihuahua. By early March, twenty-five families with 133 wagons had crosed the border and were encamped along the streams. By mid-April about 350 Mormons were in camp in Mexico, awaiting word of agreements to buy land. For months they waited, while their representatives negotiated with the Mexican officials, who had a lively awareness of the possible dangers of *Yanqui* encroachment.

Eventually, an agreement was made to purchase fifty thousand acres on the Piedras Verdes River, north of the old Mexican town of Casas Grandes and 120 miles south of the New Mexico boundary. Two other tracts of about the same size were acquired further to the north, and the eager colonists set about the job of building a new life in a new land.

They laid out townsites with broad streets and square blocks, following the pattern established by Brigham Young in Salt Lake City and elsewhere in Utah. The first dwellings on the Piedras Verdes were mere dugouts on the banks of the river, for first things had to come first: diversion dams in the river, main stem canals, lead ditches, and laterals from which tiny streams could be led alongside each row of corn, carrots, beets, or parsnips—hardy crops that would carry a family through the winter.

The work went fast. Fields were fenced in, corrals built, and eager hands turned toward the construction of respectable homes. Then a sudden blow canceled every spadeful of earth that had been turned, every furrow that had been plowed, every post that had been cut, trimmed, and dragged to town to take its place in a structure for animals or men. The survey had been wrong. They had made all their improvements on land belonging to the San Diego Rancho. Their own land was two or three miles farther up the river, in the very mouth of the canyon. Here there were no smooth, level acres all on one side of the river. Instead, their purchase was split down the middle by the stream, and the land sloped off from hills on each side over gravelly benches to the rocky bottoms below.

Less dedicated churchmen might have thrown up their hands in disgust and gone back to face the marshals. Not so this group. God would not let them down. And as things turned out later, their move was indeed fortunate. For the graveled slopes of the bench land were

Energetic Mormon colonists in northern Mexico soon recreated the environment they had left behind. Dan Skousen's flour mill at Colonia Juárez, for instance, was every bit as grim and substantial as the monuments to progress and affluence erected in many a town of Utah and Idaho.

perfectly suited for growing apples — the best in all Mexico — whereas the heavy clay soil of the level plain would have yielded none at all.

Western Chihuahua was a country rich in natural resources. Splendid stands of timber clothed the slopes of the mountains. The grass grew long and rich in the valleys and on the plain. Deer and turkeys abounded in the mountain glens. Fish thronged the sparkling canyon streams. It was a land of promise, and the Mormons were bursting with the desire to exploit it. They planted grain and fruit trees. They cut logs and sawed lumber. They built grist mills and saw mills, a tannery, a shoe shop, harness and saddle shops, and a tin shop to supply cans for their fruit. They dug clay pits and burned excellent brick in their own kilns. They constructed handsome, dignified houses, tall and impressive even by Salt Lake City standards. They had optimistically named their town Colonia Juárez, after the great libertarian. And as other Mormon colonies sprang up, they were named in honor of prominent men in the newly adopted land: Colonia Dublán, Colonia Díaz, Colonia García, and Colonia Pacheco.

The mother church in Salt Lake City kept a watchful eye on the towns and sent officials down to advise the colonists. The advice was often given by men of practical sense — and was sometimes ignored. When Apostle Teasdale, one of the body of twelve leaders in the church hierarchy, found the Mormons in Colonia Díaz building too close to the banks of the river, he warned them to change the location of their town to higher ground, predicting destruction by floods if they did not heed his words. But it was too frustrating to begin all over again. They took a chance on the vagaries of the heavens — and lost. Many was the night when sleep was broken by the shouts of the watchman: "Everybody! Everybody out with shovels! Water going over the levee!" This warning came so often in Colonia Díaz that the children took to playing the game of "Flood! Flood!," enacting all the parts of their frightened parents. The upshot was that the town did have to move to a safer level, and all the work of building and improving was repeated.

But despite flood and fire, earthquake and disease, the colonies flourished. The settlers raised far more wheat than they could use themselves, so they built mills and began to supply Chihuahua with flour. Their sawmills produced prime lumber for Ciudad Juárez and El Paso, as well as for the many mining enterprises throughout the state. They made and marketed large quantities of cheese, and made more shoes and saddles than they could use themselves. Their canned fruit and vegetables won prizes at the national fair in Mexico City and caused President Díaz to point to them as model settlers from whom his own people could learn. By 1910, the Mormon colonies of Mexico were beginning to enjoy real prosperity. But Nemesis was looking over their shoulders.

As the star of the revolutionist Francisco I. Madero rose above the horizon in 1910, the star of the Mormon colonies was doomed to decline. For Madero gave light and hope to hundreds of thousands of hungry and destitute Mexicans. It was inevitable that the fires of revolution that Madero kindled should begin to burn in the northern part of the country, where the Mormon colonies had become the bread-basket of Chihuahua. A combination of circumstances brought about this inevitability: Chihuahua was hundreds of miles from the seat of national authority; Federal military establishments in this sparsely settled land were few and far between and inadequately manned; and, perhaps most important of all, Chihuahua lay smack against New Mexico and Texas, where arms and supplies could be bought as fast as money could obtain them. Chihuahua was the natural seedbed of Madero's revolution, and the Mormon colonies were ordained by fate to provide nourishment for its growth.

Madero's first important move was an attempt to take over poorly garrisoned Casas Grandes. He attacked the town on March 5, 1911, and after a day-long fight was on the point of achieving victory when Federal cavalry commanded by García Cuellar burst in upon his rear. The balance shifted, the rebels were routed, and Madero himself was wounded. Paradoxically, Madero gained significantly from this loss: word spread rapidly that the rebels at last had a leader who was brave and would fight, and the revolutionary cause was immensely stimulated by reports of the battle.

The whole affair had taken place virtually on the doorstep of the Mormon colonies. The colonists stirred uneasily. Their leaders, both in Mexico and in Salt Lake, advised them to maintain a strict neutrality. But the fact was that they had prospered under President Díaz, and they looked for the central government to put down these rebellions and get things back to normal. It was with growing alarm, then, that they felt the pressure

A family group, perhaps some of the Romney clan, gathered on the porch of a Colonia Juárez farmhouse in about 1900. . . .

of rebel bands increasing steadily. The needs of the rebels were of the most elemental sort: food, horses, saddles, guns, and money. Troops without logistic support had to live off the country, and the colonists, by their very energy and thrift in making themselves independent, had also made themselves useful to the revolutionaries.

In their appeals for handouts, the rebels became bold and demanding. What had once been a polite tap on the door became a rude pounding with a pistol butt. Cattle disappeared from the fields at night. By 1912, the situation had become so tense that the colonists smuggled in a quantity of high-powered rifles in order to defend themselves and their families if worst came to worst. Feelings were soon raised to a critical pitch by the Juan Sosa affair.

Sosa was a local Mexican who lived on the outskirts of Colonia Juárez. He had always been a surly neighbor, but the advent of the revolution had made him insolent and overbearing. When an incident of petty thievery led to the arraignment of four Mexicans, Sosa came swaggering into the courtroom and threatened the whole community, including the Mexican judge conducting the trial. After Sosa left the building, the judge designated seven Mormons to follow him and arrest him. Sosa resisted by laying open a Mormon scalp with a shovel, and

was consequently shot dead.

The situation was now extremely precarious. Four of the Mormon possemen were jailed, along with the four Mexicans whose looting had touched off the whole series of events. Later, agitation for a lynching of the Mormons was quelled by the fortunate appearance of Raoul Madero, brother of Francisco, and Pascual Orozco, a trusted lieutenant of the revolutionary leader.

After their release the four Mormons remained out of sight, in hiding from the local authorities, who attempted to recapture them as soon as Orozco and Raoul left Casas Grandes. Not until a typically sudden shift in local power occurred did the men emerge and resume their normal living patterns. Pascual Orozco, slighted when Madero went to Mexico City as President without him, and wooed by local *hacendados* who were furious with Madero and frightened by his betrayal of the land-owning class to which he belonged, decided to conduct a revolution of his own. His colorful leadership soon attracted a following that enabled him to drive out the Maderista forces and take Casas Grandes for himself. Now there were three contending forces in the North: the Federals, the Maderistas, and the Orozquistas (or *Colorados*, as they were dubbed because of the red band each soldier wore around his arm). In the struggle for power, issues often sank from sight, and unlettered peons, fired by the prospects of liberation from penury and virtual enslavement, joined whatever faction was dominant in their region.

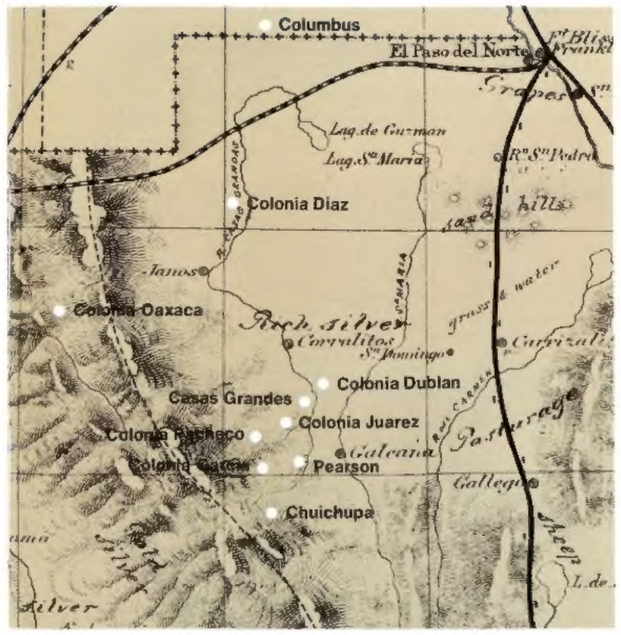
As the pressures upon the Mormon colonists increased, the worries of their leader, Stake President Junius Romney, multiplied. Despite his frequent admonitions of restraint in dealing with revolutionaries (who often stripped a home of money, food, and the owner's personal belongings), he feared that some obstreperous rebel band would push a badgered householder to violent resistance. Such an incident could explode into a massacre. It was almost unthinkable, and yet it was a very real danger.

Under these circumstances, the colonists entered upon the summer of 1912. Their frustrations, however, were perhaps no greater than those of Inez Sálazar, the commander of rebel forces in the area, whose headquarters were at Casas Grandes. Sálazar's troops were short of guns and ammunition. The need for these basic weapons crowded out every other consideration when Sálazar learned of the imminent approach of two Federal armies. In desperation, he issued an order for President Romney to appear before him, and then demanded that the colonists hand over all the guns in their possession. Romney refused, saying that he had no jurisdiction over private arms. Sálazar glared at Romney and said, "In that case you are my prisoner; and I will keep you until you give the order for the arms to be surrendered to us."

Romney knew that the rebel general meant what he said. His fears were magnified by Sálazar's announcement that he had several cannon on flatcars near Colonia Dublán, with the muzzles trained on the town. "If you do not accede to my demands," he threatened, "I will treat you as I would enemies, and fire upon your town in the same way." Romney temporized. He called for a conference with his counselors, who were wating for him in another room of the building. They decided that they would give up all but their best guns, and send their wives and children back to the United States.

So it was that on July 25, 1912, President Romney sent runners to all the colonies with instructions for the immediate exodus of all women and children. With the exception of Josh Stevens, a rugged individualist up in Cave Valley, a remote settlement in the mountains, all the colonists obeyed the call of President Romney and hastily prepared to send their families back to the land from which they once had fled.

The decision had come so unexpectedly that no time was allowed for any but the most perfunctory preparation. Some householders spread a sheet in the middle of the floor, threw articles of all sorts on it in a heap, and



In 1885, when the founders of Colonia Juárez located their town and their farms on the banks of the Piedras Verdes River, they lived in rock and thatch dugouts (above) while the more essential work of clearing, irrigating, and planting fields went forward. But crude as their shelters were, they saw to it that the children were well dressed for an historic photograph.

bound them up. In near panic they hauled away many unnecessary items and left essentials behind. A few pieces of clothing per individual and a few sheets, blankets, and quilts for the lot of them was all that could be carried. Dishes were left in the cupboards, clothes on hangers in the closets, canned fruit on the shelves in pantry and cellar; rugs, furniture, drapes, dresser drawers full of personal possessions — all were left in place, as if the absence would not be for more than a day or two. Indeed, many persons firmly believed that the Federal troops so much feared by Sálazar would soon clear the area of rebels; that the revolution would be put down, and the colonies allowed to carry on as before.

The trip to the border was a nightmare of misery, frustration, and fear. Mothers with their large broods about them climbed on the trains without knowledge of their destination, without food or money or the means of getting it, and without knowing when they would be reunited with their husbands. Furthermore, the trauma of parting from their men under these circumstances was capped by the fact that insufficient coaches had been sent to accommodate the refugees. Many of the thousand-odd women and children had to ride through the stifling summer heat in cattle cars.

On their arrival at El Paso, the refugees were met by kindly citizens with horses, buggies, wagons, and automobiles. Most of the families were taken to empty lumber sheds, where they were protected from the direct rays of the punishing midsummer sun, but had no privacy except that provided by blankets hung from wires. Church officials in Salt Lake City sought help from the United States government, and obtained a loan of tents and issues of food rations. The government also arranged for refugees to obtain free passage on railroads to any point in the country where they could find permanent work or support from friends and relatives. But most of the families had nowhere to go.

The developments back in Chihuahua during the next ten days were anything but encouraging. Captain Cavada came riding into Colonia Juárez with fifty armed men on horseback and rudely announced that he would not put up with "any more killing of my men by the Mormons." His charges were preposterous, but President Romney interpreted them as a simple pretext for an attack on the colonists and seizure of their property. Every move the Mormons made further aroused the suspicion of the rebel bands. Romney sent word around Colonia Juárez for all the men to slip out of town secretly at night

and meet in the hills for a discussion of their plight. That night, Romney described the situation to them as he saw it, making it clear that he felt it necessary for them to leave Mexico for a while. He called for a vote, and the decision was for exodus.

The vote reflected the characteristic Mormon response to the authority of its priesthood, for many of the colonists felt that the trouble would blow over in time and that life in their own towns would be preferable to the uncertainty of life in the United States.

Only two men rejected the call and the decision to go out. They were Byron MacDonald and the independent-minded Alma P. Spilsbury. Their refusal to go was less rebellion than a conviction that they could be of more value to the colonists if they stayed to placate the Mexicans, escorting the officers to the best beds in town and showing their men where to find garden stuff for their own meals, and hay and grain for their horses. They stayed behind and performed the functions of gracious hosts, cheerfully leading the troopers to the choicest accommodations that Colonia Juárez could provide. In this way those who were ugly-tempered and resentful of the Mormons were disarmed, and many articles were saved from theft and destruction.

In the abandoned mountain colonies, where no shrewd Spilsbury had remained behind, the Mexican troopers indulged in a spree of wanton destruction. They shot cattle and hogs in streets and yards, and left them there to become carrion. They tore pickets off the fences for firewood. They stripped the houses of furniture, carrying off everything that was at all portable, even chopping a mirror out of an organ with an axe because the organ itself was too heavy to haul away. They strung balls of rag strips, which thrifty housewives had gathered for rag carpets, over trees and fences throughout the town. They smashed jars of fruit on the shelves in pantries and cellars. They ripped open feather beds and dumped the feathers out on the floor in order to salvage the ticking for clothes and sarapes.

Once the decision to leave the colonies had been made, the colonists operated with their characteristic organizational skill. Church leaders assumed command and assigned responsibilities to various large and small groups. With an advance guard and a rear guard, and a leader for every small group of ten men, the band set out for the border.

To such men as Bishop Bentley and Alonzo Taylor, who had just seen the Mexican rebels under Captains Cavada, Escobar, and Castillo hurriedly depart from Colonia Juárez when a scout rode in to report that he had sighted the forces of General Blanco approaching the town, the flight to the border seemed an incredible mistake. They had put in the best years of their working lives building up this community and had seen the rebel soldiers looting on all sides of the town in the days before they left. What would happen after they had gone? The Mexican farm hands they were leaving to look after property would have little authority in the face of determined looters. Certain individuals who went through the experience are still convinced that President Romney's action in calling for the exodus was precipitous. They strenuously object when they hear people say that the colonists were "driven out" of Mexico. They insist that they were "called out" by their own leaders. Perhaps Romney's fears were well grounded and there would have been a general blood-letting. But some argue heatedly that this could not have happened. And when one looks at the record dispassionately, one is forced to admit that the Mexicans must have behaved with unusual restraint, considering the atrocities generally committed in the midst of a revolution. Quite a number of families returned to Colonia Juárez and Colonia Dublán after the exodus, and though there were a number of whippings, as rebels attempted to force colonists to reveal where they supposedly had hidden money or horses, not a single incident of rape has been verified, and very few murders were committed.

Church authorities sent A. W. Ivins down to El Paso, where he supervised the temporary relocation of refugees and their later dispersal to points in New Mexico, Arizona, and Utah. Ivins was an apostle of the church who had himself lived in Colonia Juárez, and reports of meetings held in El Paso indicate that he was of the opinion that the colonists should never have left their homes. It was also decided at the meetings that any colonists who wished to return to Mexico could do so without prejudice, although the official church organization in Chihuahua would be formally disbanded. This was all the encouragement some needed, and within three weeks of their arrival in New Mexico (the colonists had ridden due north to the nearest border), a group of about thirty-five men, women, and children had returned to Colonia Juárez.

As the months passed and refugees found it hard or impossible to get employment in the United States, many families drifted back to their home towns in Chihuahua.

The colonists did well commercially, and gave co-existence a good try. Above: one of several sawmills on the eastern slopes of the Sierra Madres, perhaps near Chuichupa. Below: a friendly gathering in Colonia Juarez. Miguel Ahumada, Governor of Chihuahua, is seated in the center with A. W. Ivins on his left and Bishop Joseph C. Bentley behind his right shoulder.

Not that life was particularly easy there, for raiders frequently stripped them of food and possessions. But at least there was subsistence living, and there was always the hope that the revolution would finally sputter out and allow them to return to normal living and prosperity. They survived, but not without persistent and sometimes downright dangerous harassment. They had the wisdom to attempt to carry on life as though nothing untoward had ever happened. For example, the Juárez Stake Academy was reopened, and continued to hold classes even when troops of soldiers swarmed into town and disrupted every other kind of business. Officers more than once swaggered into the classrooms, only to be met with courtesy and a program of patriotic Mexican songs and recitations. But the antagonism was sometimes more bitterly evidenced, as when General Sálazar came riding into town in 1917 at the head of a formidable troop of soldiers, determined to either make the Mormons fight with him or wipe them out.

The incident took place after the withdrawal of Pershing's army, which had spent the greater part of a year chasing Pancho Villa, who had made a brash raid on Columbus, New Mexico, in March 1916 (see "A Fight that Could Have Meant War," *The American West*, Spring, 1966). The colonists who had been brave enough to stay on in Mexico after Pershing's soldiers left fully expected some form of vengeance to be taken upon them because of their close ties with the United States and because they had profited noticeably from the opportunity to supply Pershing's forces.

On February 17, 1917, Lester B. Farnsworth was working in his orchard a short distance from Colonia Juárez when he heard the ring of hoofs and the clink of bridles on the road that ran along the crest of the ridge above his farm. Looking up, he saw a large force of men riding by, seemingly well equipped with good saddles, rifles, and crossed bandoliers of cartridges. His crippled old horse heard the animals too, and whinnied at them. Immediately, two soldiers left the ranks and came down over the hill after the horse. They then permitted Farnsworth to hitch his little two-wheeled cart to the old horse and ride into town with them.

As they passed through the town, Joseph C. Bentley, who had been made Stake President in Mexico, came out into the street and flagged Farnsworth down. He said that General Sálazar had just ridden through town and was asking for him. Together they rode to the lower end

Continued on page 66

Shakespeare in the Logging Camp

BY THOMAS EMERSON RIPLEY

The loggers of the Northwest were crawling out from under the wreckage of the awful depression of the Nineties. It had started in London with the failure of the great banking house of Baring Brothers. It had crept its paralyzing way westward, wrecking banks and industrial enterprises, until it struck our top-heavy financial structure on Puget Sound. It knocked us flat, but we were young and innocent, and we didn't know we were knocked out. A busted banker in Tacoma ventured an aphorism: *It pays to keep a' wigglin'*. We pasted it in our hats. And then Bryan, with his Crown of Thorns and Cross of Gold campaign, was defeated; McKinley, champion of the gold-bugs, was elected. We lifted our hearts in new confidence and tore into the timber.

It was in the savage forest of the Puget Sound country that I first saw George Moore. We were logging a tract of timber on the north fork of the Stilaguamish River. Pretty tired and footsore, I reached camp and was greeted by George as he stood high above me on a fallen log, as solid and dependable as the giant firs that crowded on him as thick, so George said, as the hairs on a dog's back.

In his earlier days, George had been the prototype of the lumberjack of the novels and the movies. He had taken to the calked boots and the sawed-off pants of the logger about as soon as he had outgrown his diapers. On the river drives of Wisconsin he had learned all the tricks of hell and high water. If there was a dangerous and particularly spectacular job to be done, George was the lad who volunteered. When a jam formed and the key log had to be blown, George was the boy who had jumped to the job with a whoop and a what-the-hell, scrambling to precarious safety as the jam heaved and grumbled — then let go, sending the logs roaring down the river.

Whether in the woods or on the river, he had fought his way to supremacy among the loggers. The drive completed, he had followed the way of the logger in calked boots, his pockets lined with his season's pay in folding money, blowing his wad while measuring his strength with all comers in the saloons and skid-road joints of the nearest town. He was handy with his fists but handier with those murderous boots, with which he could "jump his man and put the calks to him." As George put it with magnificent understatement, he had been "a lively sort o' cuss."

The years passed and George, his wild life of derring-do in the past and the blood cooling in his veins, found his way to his natural setting, the country of the big trees. The logger of the West Coast was still the authentic lumberjack, the tough, rip-roaring denizen of the woods, the easy-come-easy-go visitor to the town, welcomed with a mixture of terror and delight in the red-light district. Many an old Puget Sounder casts a nostalgic backward glance at those days of "the great race," when the workday lasted from predawn to after dark, when the logger wolfed his grub in the cookhouse, swapped his bawdy stories while squatting about the cookhouse door, and literally hit the hay in his wooden bunk, his high-smelling blankets making a warm welcome to the bugs without which no camp was supposed to exist. One may get a valid picture of the lumberjack of that time by reading Stewart H. Holbrook's *Holy Old Mackinaw*. It gives a good picture of what George had been in an earlier day.

In the Northwest George set himself to learning the tricks of handling timber too big to be yanked about by the cant hook of logging tradition. He learned to use the compass and to tally his paces for as many days on end as were necessary to locate the witness trees, and then, as by a miracle, to arrive squarely at the weathered stump and read the nearly obliterated hieroglyphics that proclaimed the section corner of a confused wilderness. He could count the marketable timber in what he called a "round acre" as accurately as though he had squared the acre off with a tape line. He learned to use whatever instruments a surveyor uses. He learned to lay out a logging railroad, build bridges, and lay steel that would do credit to a transcontinental system. He could splice a wire rope — and his big thumbs bore witness to the number of times he had done it. No job was too difficult or too dangerous for him to tackle, to master, to direct.

It was inevitable that he should become the big boss of our modest logging operation. It was a man-sized job for a one-time bindlestiff.

My company had bought this timber tract on the Stilaguamish on the assurance that there was "allus a flash o' high water" in its season to carry our logs to tidewater, where they would be rafted by the boom company and towed to the mill. In the happy innocence of the tenderfoot, we made an agreement with a contract logger. The contract contained such words as "dams, sheerbooms, dolphins, and such other river improvements as will insure the swift passage of the logs to tide-

To an old-time lumberman like Thomas Emerson Ripley, a logger reached maturity in caulked boots and sawed-off pants. But Darius Kinsey, who made his living with a camera in the Northwest woods, is quoted as saying, "You aren't a logger until you've bought a dollar watch and had your picture taken with a tree."

ALL ILLUSTRATIONS BY DARIUS KINSEY

water." Heartening words, out of a lawyer's book.

Young, new at the game, we watched George hopefully as he logged patiently for two solid years, hauling turns of logs over his skid-road to the landing, rolling them into the bed of the stream till the river looked like a pile of giant jackstraws. And still we looked in vain for that "flash o' high water." It didn't come. We borrowed—and again borrowed. We *bought* logs for the mill, all the time piling up a wealth of our own logs in the Stillaguamish. And as we signed notes at the bank, we prayed for that "flash o' high water" and clung to our precarious perch of solvency. Meanwhile, the log market kept going lower and lower as our pile of logs went higher and higher and interest rates kept pace. It was a desperate situation.

And then something happened. A copy of "The Complete Works of William Shakespeare" found its way into the wilderness and into George's hands. He read:

> The fault, dear Brutus, is not in our stars
> But in ourselves, that we are underlings

Good stuff, that. And God! Ain't it the truth!

He read on, and as he read the alchemy of poetry transmuted the familiar metals of his life into pure gold. Nothing was ever quite the same for George after he had discovered that there were *words* with which he could express all that had so struggled for expression. "Jee

At fifty cents per print, Kinsey documented the loggers and logging of Washington around the turn of the century. Hauling away a giant of the virgin forest was always good for a grand group scene.

zus!" said George. "How he could *marshal* them words!" And he found the imagery which could picture the green world about him in new forms. He looked at the leering face of the bawdy hook-tender and discovered the living image of Falstaff. As a zealous machinery salesman went down the trail, he saw "Yon Cassius" with his "lean and hungry look." He turned his gaze back and the woods about him became the Forest of Arden. He found "tongues in trees, books in the running brooks, sermons in stones and good in everything." "I would not change it," said George.

The camp was a lovely place to visit and I found excuse for frequent trips up there. It was reached from the very new city of Everett, where you had to spend a night at the Everett and Montecristo Hotel. From there you rattled on your way via the Everett and Montecristo Railroad to Granite Falls. There you crossed the Stilaguamish in an Indian war canoe, dug out by an old Indian who spent his time burning and hacking the cedar into ship shape on our bank of the river.

Like the true "Bull o' the Woods," George got going at his job at about four in the morning, putting in a day as long as daylight, a day that would strain the back and break the heart of anyone but a logger. He looked at me with pity. He thought that my job, "sittin' at that desk and makin' figures," must be pretty tough. He just didn't know how I *stood* it. So, bidding me "enjoy the honey-heavy dew of slumber," he let me sleep late — as late as six or seven o'clock — while he enjoyed the relaxation of such light work as moving a donkey engine to a new location. Then breakfast (and *what* a breakfast!) and a ramble over the skid-road to watch the fallers and the yarding crew, George quoting whole passages of Shakespeare that had burned themselves into his memory, while I struggled to cap his wealth with my meager store of Shakespearian wisdom. He looked on as a riggin' slinger cursed at the tangle of his job and observed:

> When you cannot as you would achieve,
> You must, perforce, accomplish as you may.

(Any fool riggin' slinger could have told you, if he had understood such highfalutin' words, that that was particularly true of his job.)

And then a cloud, a lot bigger than a man's hand; the "flash o' high water"; the rising of the flood. The logs at the bottom of the stream bed stirred, pried themselves upward. The mass groaned, it moved, and then it jammed. The waters piled up behind the jam. We hopped the floating logs downstream to the point of the jam. George blew the key log with dynamite and the accumulation of two years' logging whispered and then, with a grinding complaint, floated down the river. The logs filled the stream, bank full; they overflowed the boom; there weren't enough boom sticks and chains to hold them. They blocked the passage for the U.S. mail boat and the authorities threatened to send in the snag boat to clear the passage and turn our precious logs loose and out to the log pirates of the Sound.

As the river rose, so did the price of logs. The demand was insatiable. The cashier at the bank smiled at our bit of swaggering as we retired our notes. George smiled

A carload of logs hits the slough.

knowingly and with mock solemnity declaimed:

> There is a tide in the affairs of men,
> Which, taken at the flood, leads on to fortune.

The flood tide on the Stilaguamish washed our operation and George's affairs out of the red and into the black.

On a summer's day, George, squinting over the tree tops at the promise of a lovely tomorrow, thought it was time he went downstream to see what logs had stranded on the banks and what had found their way to the boom. Of course I thought so too. Would I go along? "To unpathed waters, undreamed shores?" Would I! "We'll start early," said George:

> The day shall not be up so soon as I,
> To try the fair adventure of tomorrow.

The big dugout, steady and staunch as no lapstrake skiff could ever be, was loaded with what gear might be needed, and with a couple of water-wise loggers for crew we turned our bow downstream. The rain-washed blue of the sky, the white water, the dark pools in which the rich dark green of the forest was mirrored, George's logger's talk, interlarded with Shakespeare, made this excursion one to remain long in the memory. I spent much time hanging over the bow watching the salmon, so many and so thick that I could easily reach for a friendly encounter with one whenever the wish tempted me.

> The pleasantest angling is to see the fish
> Cut with her golden oars the silver stream.

I don't remember that George really quoted that one, though he could and would have done so had he not been so busy counting our wealth of logs. Meanwhile I needed no "treacherous bait," for I could have killed a salmon at any time with a stick — a disgracefully unsportsmanlike thing to do. (And why should I want a salmon? During the recent depression, I had been so fed up with salmon that I could look one in the face only as she struggled up the stream to spawn.) We counted and scaled the stranded logs, all branded with a monogram of my initials, and we estimated the riches that had floated free. It was a pleasant thing to contemplate. George, settling himself comfortably in the stern, observed: "Now is the winter of our discontent made glorious summer."

Puget Sound loggers, in irreverent paraphrase, used to recite:

> Count that day lost whose low descending sun
> Sees markets shot to hell, and loggin' done for fun.

I am sure George would be the last to ascribe his success on the Stilaguamish (and later) to the inspiration he derived from Shakespeare. He was wholly unconscious that the poet's words gave him a sort of measuring stick by which to judge the acts of men and the moods of nature, and a philosophy with which to anticipate the "worldly chances and mishaps" of either.

We finished the job, bade goodbye to the banks of the Stilaguamish and looked for a new "chance." (Significant word, that, for of all the chancy operations that adventurous men tackled, the logging "chance" was the chanciest. The reward was always either a feast or a famine; there was no middle alternative.) George knew the chances like the inside of his blanket roll. Mention any faraway bit of wilderness and George spotted it in his memory, much as a New Yorker would recognize the corner of Fifth Avenue and Forty-second Street. "That north-west quarter of the north-west quarter of section so-and-so, township so-and-so? Yes, I was lookin' timber up there 'bout ten years ago. Godawful up and down country; considerable cedar, but the fir's pretty conky." He cruised and I followed, wherever he was lured by stories of ground "level as a billiard table" and timber which would cruise "fifty, maybe a hundred, thousand to the acre."

George pursued his logger's way, unconscious of "the bubble reputation" that followed and finally overtook him. "A man that fortune's nuggets and rewards has ta'en with casual thanks." One of the big-time loggers offered him wider fields of opportunity than were dreamed of in his philosophy — or ours. In British Columbia he undertook the far-flung operations of the Tyee, managing his camps from his eagle's nest in the top story of the Vancouver Hotel. He went on from success to success, combining his love of achievement with a wholesome regard to the counsel, "Put money in thy purse." As his years piled up upon him, his purse grew plethoric. He bore his reputation and his wealth modestly and, as is the way of men and money, he exchanged the free and easy life of the camp for the straitjacket of a luxury hotel.

"Shall I not take mine ease in mine inn?" he asked.

The story of George appears in *Green Timber*, a lively and detailed account of life in old Tacoma by Thomas Ripley, printed and privately circulated by his family. Many of Darius Kinsey's fine photographs may be found in Ralph W. Andrews' *This Was Logging!* and *Photographers of the Frontier West*.

THE GRAND CANYON AND THE COLORADO

The Eye of the Beholder

A naturalist-philosopher chronicles man's changing perceptions of the Canyon.

The Canyon Dwellers

An archaeologist examines evidence that the awesome Canyon wilderness was familiar ground to men centuries before Christ.

Image-Makers of the Colorado Canyons

The American adventure with the Colorado, from exploration to visitation to recreation, as seen in the development of field photography.

River Run

A journalist discovers how the suburbanite with gumption can still find the meaning of the wild river of the West.

The Use and Misuse of a River

An ecologist analyzes the Colorado—and wonders when and how the historic conflict between utility and beauty can be resolved.

THE EYE OF THE BEHOLDER

BY JOSEPH WOOD KRUTCH

A little more than four centuries have passed since the first European saw Grand Canyon. It was several million years old then, and it can't have changed much since. It may possibly be a tiny bit deeper, and it certainly is just a little bit wider. But the Canyon remains pretty much what it was, while men's attitudes toward it have changed, century by century.

To the first men who looked into its depth, it was little more than something that stood in their way, saying, "Thus far shalt thou go and no farther." Since then, four subsequent pioneering groups have illustrated the emergence of new attitudes, and in each case these attitudes were the products of a whole complex of social, economic, scientific, and esthetic concerns that affected man's attitudes not only toward the Canyon but toward almost every aspect of the world he lived in. Even in the space of a single article one can catch just a glimpse of the way in which this was true.

Let us, then, start with Don Lopez Cárdenas, whom Coronado sent out in 1540 with twenty-five horsemen to locate a river of which some report had reached him. After many hardships, the party suddenly found itself gazing into an immense abyss, probably near what is now called Grand View. When Cárdenas got back to Spain, found himself in difficulties, and wrote a report on his journey, he made no reference to the Canyon, but the narrative of Pedro de Castañeda gives a vivid account:

> They spent three days on its bank looking for a passage down to the river, which looked from above as if the water was six feet across, although the Indians said it was half a league wide. It was impossible to descend, for after these three days Captain Melgosa and one Juan Galeros and another companion, who were the three lightest and most agile men, made an attempt to go down at the least difficult place, and went down until those who were above were unable to keep sight of them. They returned about four o'clock in the afternoon, not having succeeded in reaching the bottom on account of the great difficulties which they found because what seemed to be easy from above is not so, but instead very hard and difficult. They said they had been down about a third of the way and the river seemed very large from the place which they reached, and that from what they saw they thought the Indians had given the width correctly. Those who stayed above had estimated that some huge rocks on the sides of the cliffs seemed to be about as tall as a man, but those who went down swore that when they reached these rocks they were bigger than the great Tower of Seville.

Every historian and commentator has remarked upon the obvious fact that Cárdenas and his party seemed to have been blind to the beauty of a spectacle they were the first Europeans to see. It is equally obvious that scientific curiosity and possible exploitation—both destined to be so much the concern of subsequent visitors—were equally far from their minds. They were too immersed in hardship to be interested in scenic beauty, and were looking for wealth ready made in the form of gold, not for the possibility of developing resources.

It is less often pointed out that there were other reasons, both less obvious and more far-reaching in effect, why they had neither scientific nor esthetic appreciation of what was destined to be considered one of the wonders of the world. Even if Cárdenas and his companions had been as safe, as comfortable, and as leisured as cultivated Spanish or Italian gentlemen of their time, it is unlikely that they would have found the Canyon beautiful. The only landscapes so considered were tame fields or gardens, subdued to man's needs. Mountains were still "horrid," not "grandiose," and "awe" still meant "fearful," not "sublime."

The mental world in which even the learned of that day still lived made it equally impossible for Cárdenas to have any scientific interest in what must have seemed a mere defacement of the landscape. Not only were they still centuries away from the realization that slow geological processes could explain the physical aspects of the earth, but prevailing beliefs about the history of the terrestrial globe reinforced the feeling that all rugged landscape was ugly and frightening.

The ancient Hebrews, the early Christians, and most of the learned men of the Middle Ages had believed what the contemporaries of Cárdenas still took for granted, namely, that the history of the earth was the history of its ugly senility. God had created it smooth and perfect, but his punishment for the sins of mankind from Adam on had been visited not only upon the men them-

selves but upon their earth. As one rabbinical commentator wrote: "The earth . . . became mountainous as a punishment . . . and will not become level again until the Messiah comes." This notion reappears in poets as well as theologians down into the seventeenth century, when the Englishman Thomas Burnet attempted to restate it in terms acceptable to the new scientific outlook:

> The face of the earth before the Deluge was smooth, regular, and uniform: without mountains and without a sea. . . . It had the beauty of youth and blooming nature, fresh and fruitful, and not a wrinkle, scar or fracture in all its body, no rocks nor mountains, no hollow caves, no gaping channels, but even and uniform all over . . . quite suited to a Golden Age and to the first innocency of nature.

If Cárdenas had any ideas concerning the meaning of what we call the grandiose beauty of mountains and canyons, they were certainly not likely to encourage him to see in the Grand Canyon more than a defacement of the earth and an obstacle put in the way of his exploration. We must excuse what at first sight seems mere insensitivity.

If any European again saw the Canyon during the next two centuries, he left no record. Then, shortly before the American Revolution, a Franciscan missionary, Father Garcés, visited the Indians in Havasu Canyon on his way west. Probably he was no more interested than Cárdenas in either the magnificence or the geological lesson of the region, though it was he who conferred the name *Colorado* (or Red) upon the river later to be famous as "too thick to drink and too thin to plow." It would certainly never have occurred to him that the river had cut, rather than simply found, its course so far below even the Havasu gardens.

During the three-quarters of a century following Garcés' visit, both Spaniards and Americans traversed the country roundabout, but the next person known to have entered the Canyon itself was Lieutenant Joseph Ives of the Topographical Engineers, who explored the area south of the Canyon and as far into its lower reaches as the region above the site of Boulder Dam.

During the three hundred years between Cárdenas and Ives, the whole world had undergone several revolutions, intellectual as well as political and economic. For one thing, unlike the Spanish government of Cárdenas' time, the United States government was exploring the Southwest with an eye not to gold but to potential development. For another, Sir Charles Lyell had definitely established the fact that geomorphic features were a record of the earth's history. For still another, the study of fossils, taken together with Darwin's observations, was about to establish that theory of evolution for which the successive layers of the Canyon would serve as a sort of textbook.

Finally, another revolution, no less important in determining the attitudes that would be taken toward the Canyon, had occurred. Romanticism had changed completely the impression made upon men's minds by the wild, the grandiose, and the untamed. Mountains were no longer horrid, and when a spectator described something as "awe-inspiring," he no longer meant "frightening." He meant that it was more than pretty, or even beautiful. Edmund Burke, writing something like a hundred years after Burnet, formulated the new attitude in his essay "On the Sublime and the Beautiful." He said that if we know ourselves to be safe in the presence of something which would otherwise inspire fear, then "terrible objects [become] a source of the *sublime*; that is, productive of the strongest emotions the mind is capable of feeling."

By the middle of the nineteenth century, anyone who had read Byron's "Childe Harold" (and most cultivated people had) understood why he could write, "There is a pleasure in the pathless woods,/ There is a rapture on the lonely shore," why he celebrated the ocean just because it was dangerous to the men who dared sail it; and even why he expressed the wish that he could be part of a thunderstorm! Anyone who had read these and similarly romantic descriptions of the less smiling aspects of nature would have been prepared to find the Canyon sublime.

While Ives himself used that key word, "sublime," and was obviously not unaware of the Canyon's grandeur, his report confined itself largely to the assigned topographical task. His chief conclusion was that "the Colorado would be found an economical avenue for the transport of supplies to various military posts in New Mexico and Utah." Nevertheless, he took a dim view of the Canyon's prospects:

> Another reconnaissance has since been made on foot from the lagoons westward. A land 30 miles in extent was traversed, with results similar to those previously obtained. An excellent view was had of the Big Canyon. The barometric observations upon the surface of the plateau, and the mouths of Diamond and Cataract rivers, showed that the walls of this portion of the canyon were over a mile high. The formation of the ground was such that the eye could not follow them the whole distance to the bottom, but as far down as they could be traced they ap-

peared almost vertical. A sketch taken upon the spot by Mr. Egloffstein does better justice than any description can do to the marvelous scene.

Our reconnoitering parties have now been out in all directions, and everywhere have been headed off by impassable obstacles. . . . The region last explored is, of course, altogether valueless. It can be approached only from the south and after entering it there is nothing to do but to leave. Ours has been the first, and will doubtless be the last, party of whites to visit this profitless locality. It seems intended by nature that the Colorado river, along the greater portion of its lonely and majestic way, shall be forever unvisited and undisturbed.

The geologist of the expedition and two of the artists who lavishly illustrated the report are more unmistakably men of the nineteenth century. Their formal report is full of references to geological periods, to volcanic, sedimentary, and granite formations, to fossils, and so forth, which would have been meaningless in the time of Cárdenas. Many of the illustrations are so highly romantic that they seem less records of actual facts than memories of an awful experience.

Only a decade after Ives, John Wesley Powell brought to an end the series of primary explorations by becoming the first European, possibly the first man of any race, to follow the river through the entire Canyon. That exploit was the most dramatic part of an expedition whose main purpose was the mapping of unknown country in preparation for its exploitation. His account of the expedition, first published in 1875 as "Explorations of the Colorado River and Its Tributaries," is a dramatic tale, highly readable as an adventure story. And that, no doubt, is partly because Powell, to a much greater extent than any previous visitor to the Canyon, was prepared to regard it not only as part of a job but as a rewarding, if arduous, experience. Ives had spoken only of "the Big Canyon"; Powell seems to have been the first to call it "Grand Canyon," and the difference between the adjectives is significant.

Powell was preparing for "the Opening of the West," but he was also one of the first to be aware of the danger of overexploitation by selfish interests. "Conservation" was then hardly a concept or even a familiar word in the modern sense, but the need for it was not far away. Most men still thought in terms of conquering the wilderness; the fact that it soon might need saving occurred to only a few.

The last of the pioneers was Theodore Roosevelt, who visited Arizona for the first time on May 6, 1903, and delivered an address at Grand Canyon itself in which he said:

> In the Grand Canyon, Arizona has a natural wonder which, so far as I know, is in kind absolutely unparalleled throughout the rest of the world. I want to ask you to do one thing in connection with it in your own interest and in the interest of the country — to keep this great wonder of nature as it now is. . . . Leave it as it is. You cannot improve upon it. The ages have been at work upon it, and man can only mar it. What you can do is to keep it for your children, your children's children, and for all who come after you, as one of the great sights which every American if he can travel at all should see. We have gotten past the stage, my fellow citizens, when we are to be pardoned if we treat any part of our country as something to be skinned for two or three years for the use of the present generation, whether it is the forests, the waters, the scenery. Whatever it is, handle it so that your children's children will get the benefit of it.

To Cárdenas, the Grand Canyon had been merely an obstruction but, by Theodore Roosevelt's time, only a half a century after Ives had first revealed it to the American people, it was already a priceless treasure threatened by selfish exploitation. Today, at the very spot where Ives had predicted that no white man would ever again visit "this profitless region," hordes of tourists drive speedboats across Lake Mead.

We have almost come full circle. Once those who had seen the Canyon thought of it as useless. Then came those who thought it might be useful because of the river which flowed through it. They were in turn followed by men like Theodore Roosevelt, who saw the Canyon as a precious heritage of wonder and beauty. Now, today, it is threatened again by men interested only in exploitation, men who unfortunately have the means to destroy what no age before ours was "technologically advanced" enough to transform and mar.

"Human needs come first" is the all too specious slogan of those for whom the words of Theodore Roosevelt carry no weight. They do not like to admit that those primary needs in which they happen to be interested are the "human needs" of temporary economic advantage. That the Grand Canyon, the sublime "great unknown" of John Wesley Powell, might fall victim to the manipulations of sloganeers should be unthinkable; that it is not unthinkable should be our shame.

"The walls . . . rose directly out of the water. The river was about fifty yards wide. The channel was studded with rocks and the torrent rushed through like a mill-race."
—Lt. Joseph C. Ives, *Report upon the Colorado River.*

...from a sketch by F. W...

BIG CAÑON AT MOUTH OF DIAMOND RIVER

The Canyon Dwellers

BY ROBERT C. EULER

In search of ancient cultures, man makes use of many modern tools — the helicopter is one of the latest and most effective.

Prologue: That the Grand Canyon is one of the most significant geological records on the face of the earth has been recognized for well over a century. What has not generally been realized is that its spectacular depths also document an intriguing chapter in the prehistory of man in America.

Although Major John Wesley Powell sighted Indian ruins during his exploration of the Colorado canyons in 1869, it was not suspected until recently that human occupation of the Grand Canyon ever could have been more than a comparatively brief experience, a footnote to the story of prehistoric man in the Southwest.

In the 1950's, Dr. Walter Taylor became the first professional archaeologist to conduct a reconnaissance along the Colorado River through the entire Canyon, and his discoveries, coupled with the later findings of Dr. Douglas Schwartz, provided the first important clues to the antiquity of occupation and its remarkable extent. While this work left much to be done, it inevitably inspired curiosity as to what further secrets the Canyon might hold.

Beginning in 1960, the author participated in a series of expeditions, the first two being ten-day, 312-mile boat trips down the Colorado from Lees Ferry to Temple Bar on Lake Mead — trips which added some thirty-two sites to the known record. Still, much remained unknown: exactly how much, we would soon learn.

In the summer of 1963, the Arizona Power Authority, whose engineers were then doing some feasibility studies at the Marble Canyon dam site, loaned one of their helicopters to us. The two-week aerial reconnaissance that followed convinced us beyond doubt that this was the most logical technique of exploration. Not only could a vast area be examined, but the aerial observer could locate the pattern of ruins that might easily be missed by the investigator on foot — and landings usually could be made at or near discovered ruins in order to make collections and records

After we had made one more boat trip in the summer of 1965, Prescott College sponsored a research proposal (paid for by the National Science Foundation) that enabled us to plan and execute a truly major aerial re-

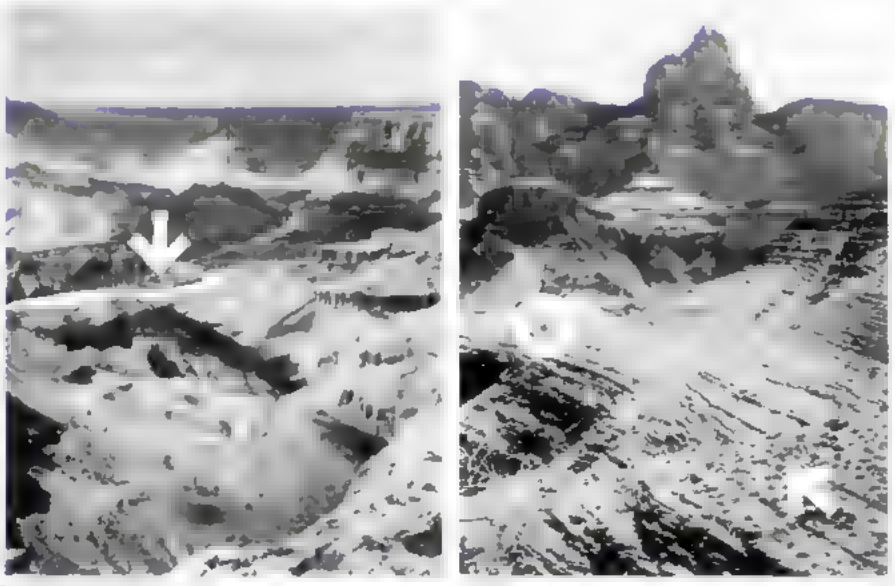
connaissance of the Grand Canyon in 1966. In a little over two months, after fifty-five hours in our supercharged helicopter and many more on the ground, we located an astonishing total of 250 ruins, at least 200 of which were new to the scientific record. The continuing analysis of the thousands of specimens obtained during this expedition has made possible the description that follows – the story of the Canyon dwellers.

Four thousand years before Major Powell's men tumbled through the Grand Canyon in their wooden boats, before geologists and archaeologists investigated its lessons and records, before photographers adjusted their focus and tourists stood on the south rim in awe – four thousand years before all this, human beings had wandered the Canyon's depths.

These men were prehistoric American Indians, primitive hunters and gatherers who used isolated caves in the Canyon's bottom as religious shrines. In several limestone-solution caverns they deposited caches of ingenious split-willow figurines of animals. Many of these effigies were pierced, probably in ritualistic fashion, with tiny wooden sticks seemingly meant to represent spears, and archaeologists believe that this was some type of imitative hunting magic. If a miniature figure of the animal to be hunted were ritually killed, success would be more certain in the actual quest.

When such split willow figurines were first discovered in the Canyon in 1933, their great antiquity was not realized. In the late 1950's some of the figurines were radiocarbon-dated at the University of Michigan and the University of Arizona. These analyses indicated an age of 1580 B.C. ± 300 years and 1150 B.C. ± 110 years, and led to the suggestion that the tiny figures may have been associated with the Desert Culture which was widespread over western North America from about 7000 to 2000 B.C. Recent archaeological investigations support the figurine dates and hypotheses. In 1963, additional split-twig figurines, recovered from a huge limestone cavern in Marble Canyon and examined at the University of California, revealed a radiocarbon date of 2145 B.C. ± 100 years, the earliest date yet recorded for such specimens. Other archaeologists have discovered similar figurines in portions of the Mohave Desert in eastern California and Nevada and south of Grand Canyon near Flagstaff and the Verde Valley.

In the early spring of 1964, what may be an important clue to the identity of the makers of the figurines was discovered on the summit and slopes of Red Butte, a prominent sandstone- and lava-capped pinnacle a few miles south of Grand Canyon. Here archaeologists found projectile points and other chipped-stone tools affiliated with the Pinto Complex, a Desert Culture people first recognized in the Pinto Basin of the Mohave Desert. While the Pinto Complex is not yet fully understood or dated with incontrovertible accuracy, most archaeologists feel that an age of three to four thousand years



Ruins are where you find them— if you can. Man's puny marks on the Grand Canyon are not easily discovered. The arrow in the photograph to the left shows the location of one site, invisible from the rim. The "close-up" of it in the photograph to the right gives some idea of its true scale, as compared with the encircled helicopter.

Once a ruin is discovered, it is not always the easiest thing in the world to get to it—helicopter or no. The Pueblo cliff dwelling (below right) incised into the face of the Canyon's north rim is a case in point. There is but one access to this ruin, a trail down the face of the cliff, indicated by the wandering arrow in the photograph above (right). The picture directly above shows the talus structure of a typical Pueblo dwelling.

would not be out of order. Thus, although split-twig figurines have not been found in absolutely certain association with Pinto Complex artifacts, the discovery of a Pinto site near caves containing the figurines in Grand Canyon supports the probability of some association.

The split-twig animal figurines, then, give mute evidence for the beginnings of human history in Grand Canyon. It is not known how long these hunters and magicians continued to use its limestone caves, but they had probably disappeared long before the opening of the Christian era. Archaeologists have found no record of further human occupation of the Grand Canyon until about 700 A.D., when Indians who were culturally much different began tentative exploration of its depths. These were Pueblo peoples, most probably direct ancestors of the Hopi. For almost one hundred years, prehistorians have been studying the history of the Pueblo Indians, and we now have a relatively complete picture of how their culture developed.

It is quite probable that they, too, began as a Desert Culture people in the Great Basin. Some time around the year 1 A.D., or slightly earlier, they moved into the

northern portions of the Southwest, near the Four Corners (where Arizona, Utah, Colorado, and New Mexico meet). Archaeologists refer to this period in their culture as that of the "Basketmaker," after their most common material attribute. These hunters and gatherers had added corn and squash to their economy by using rudimentary agricultural techniques acquired from Indians farther south. In fertile valleys they raised their crops, and in surrounding uplands they hunted deer, mountain sheep, and rabbits. They cultivated the soil with digging sticks and hunted game with spears, spear-throwers, and curved throwing sticks; rabbits were driven into nets stretched across defiles.

The early Basketmakers wove beautiful baskets, fine sandals, loincloths, and twined bags. Blankets woven of cords covered with rabbit fur kept them warm in winter. Fired pottery was not made at this time, but they produced crude clay vessels.

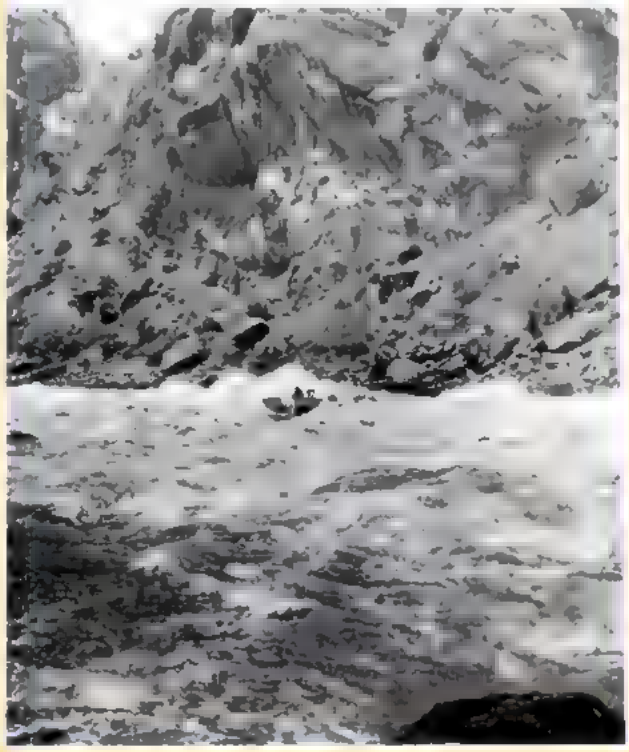
Caves, or rock-shelters, seem to have been preferred for dwellings, and into their floors the Indians dug storage chambers that later became burial cists. Occasionally they constructed saucer-shaped wooden houses in the protection of cliffs.

Around 500 A.D. (the exact date varying with the section of the Southwest) the Basketmaker style of life changed in several ways. New varieties of corn were developed, and beans introduced. Caves became less popular than circular, open pit houses, often grouped in a manner suggestive of the beginnings of village life. The weaving of sandals reached its highest development, and baskets were still widely made. Fired pottery was introduced—usually gray with simple designs painted in black —and the bow and arrow came into use to supplement the spear-thrower. This was an important era in the lives of these people. They enlarged their geographic range westerly to the lower Little Colorado River, almost to Grand Canyon, and laid a foundation for the later flowering of their culture.

With a stable economic base that combined hunting and gathering with corn, bean, and squash agriculture, the Pueblos turned to other matters. They refined their ceramic art, producing corrugated cooking ware, vessels with broad- and fine-lined black-on-white decoration, and some red pottery decorated with black paint. They added cotton to their agriculture, spinning and loom-weaving it into fabrics for clothing, and made good stone axes and hoes. Surface storage rooms, made first of mud and poles and later of masonry, became common. These ultimately developed into above-ground dwellings, the pit houses being reserved for religious and ceremonial functions.

By the middle of the eleventh century A.D., this development flowered into the classic traditions of Pueblo culture, apparently reaching a zenith first in the east, in the Chaco district of northwestern New Mexico, and later in northern Arizona. This period, continuing into historic times, saw the rise of great communal pueblos, up to five stories high and housing several hundreds of people. Subterranean religious structures (kivas) became specialized, with local variations in details. Exquisite

Before discovering the advantage of helicopter archeology investigators into the prehistory of Grand Canyon had to go tumbling down the wild Colorado by boat—an adventure that did not always provide leisure for the inspection of canyon walls and recesses in search of ruins.



pottery, black-on-white, black-on-red, and polychrome, abounded. Objects of personal adornment appeared—turquoise mosaics, beads, pendants, and shell bracelets. Communal living must have been highly organized and, if we can judge by the social, religious, and political structures of modern pueblos, authority probably centered in a theocratic hierarchy of priests.

During these centuries other great changes were taking place. Precipitation patterns that may have affected the maturation of crops began to vary in certain parts of the Southwest by the middle of the twelfth century; more intensive drought conditions came a century later. About this time, too, semi-nomadic non-Pueblo peoples made their appearance from the northwestern horizon.

These ancestors of the Southern Paiute may have been responsible for what appears to have been an intercultural relationship similar to a "cold war." Apparently, the strangers soon reached the northern rim of Grand Canyon. About this time the Pueblos consolidated their numbers along the more reliable water courses—the Little Colorado and the Rio Grande, and the usually infallible springs of the Hopi country. Here they were when the Spaniards found them in the summer of 1540.

Yet, even as the Pueblos were flourishing and, later, reconsolidating, other indigenous peoples of the Southwest were following different patterns of culture. In west-central Arizona were the Cohonina people, whose presence on the plateau of northern Arizona has been recorded from about 700 to 1150 over a range that included the south rim of Grand Canyon.

The Cohonina adopted a veneer of Pueblo culture. They attempted to build pit houses and masonry pueblos. Their pottery, although of a different technique, was gray and decorated with black painted designs in imitation of that made by their eastern neighbors. Apparently unable to produce the red pottery of the Pueblos, they slipped some of it after firing with a fugitive red paint to give it the superficial appearance of true red ware. They farmed essentially the same crops but hunted to a lesser extent. Their social and religious life probably differed considerably from that of the Pueblos.

About 1150, or perhaps slightly later, the Cohonina disappear from the archaeological record. By then, and continuing until about 1300, the Cerbat, probably direct ancestors of the Walapai and Havasupai, moved from the deserts near the lower Colorado River Valley to the plateaus that had been the Cohonina homeland. These Indians were but incipient farmers, planting near permanent springs. Hunting and gathering was their economic mainstay. They lived in rockshelters or impermanent brush wikiups. Their material culture was simple and their interest in ceramics confined to the production of brown, undecorated vessels. Yet they established a very stable way of life on the plateau, for it was here that the Spanish Franciscan, Father Garcés, first described them in 1776; and it was here they remained until forcibly removed to their present restricted reserves in the early 1880's.

It was these native peoples—the Pueblos and to a lesser extent, the Cohonina, the Havasupai and Walapai, and the Southern Paiute—who made the indigenous history of the Grand Canyon.

Prehistoric man stubbornly hung on in an environment marked by boulders the size of bank buildings—and left behind the scattered shards of his civilization. The arrow in the first photograph indicates the location of a storage cave; at right is a corrugated pottery vessel found in that cave.

The "south forty" of a Grand Canyon farmer was tucked into whatever pocket of irrigable land might be available—which was not often much. A group of Havasupai farmed their corn and beans in the circular creek delta marked by the "X" in the upper photograph. The arrow indicates the location of their rockshelter dwelling, shown in the lower view.

There is no evidence that Pueblo Indians entered the Canyon before the opening of their Developmental Period (about 700 A.D.). Then, and for the next three centuries, there was halting exploration and limited seasonal occupation. The few Developmental sites that have been discovered are marked on the surface only by fine-lined black-on-white pottery fragments. These are mostly in the eastern reaches of the Canyon, but at least one such site has been recorded near Deer Creek, 136 miles down the Colorado River from Lees Ferry. In all probability, these and later Pueblo Indians approached the great gorge from the heartland of their territory to the east.

At about the same time, but probably coming from the opposite direction, small groups of Cohonina Indians made their appearance. One excavated site of this period, located on the south rim near the Tusayan Pueblo ruin in the eastern portion of Grand Canyon National Park, consists of a circular house, two storage rooms, and several storage pits, all dug into the shallow, limestone-studded soil of the area. Within the next three centuries, the Cohonina occupied many more sites along the south rim, but not in the Canyon itself. Their buildings were mostly surface masonry structures, a style evidently acquired from contact with the Pueblos.

By 1150 A.D., for reasons not yet fully understood, the Cohonina disappeared as a cultural group. Some archaeologists believe that they became the Havasupai, while others have presented evidence that both the Havasupai and the Walapai were descendants of the prehistoric Cerbat people

Meanwhile, about 1000 A.D., there began a much larger influx of Pueblo peoples into the Canyon, culminating a century later in a major occupation of hun-

Continued on page 67

Image Makers of the Colorado Canyons

BY ROBERT A. WEINSTEIN AND ROGER OLMSTED

Grand Canyon at Kanab Creek: William Bell, 1872

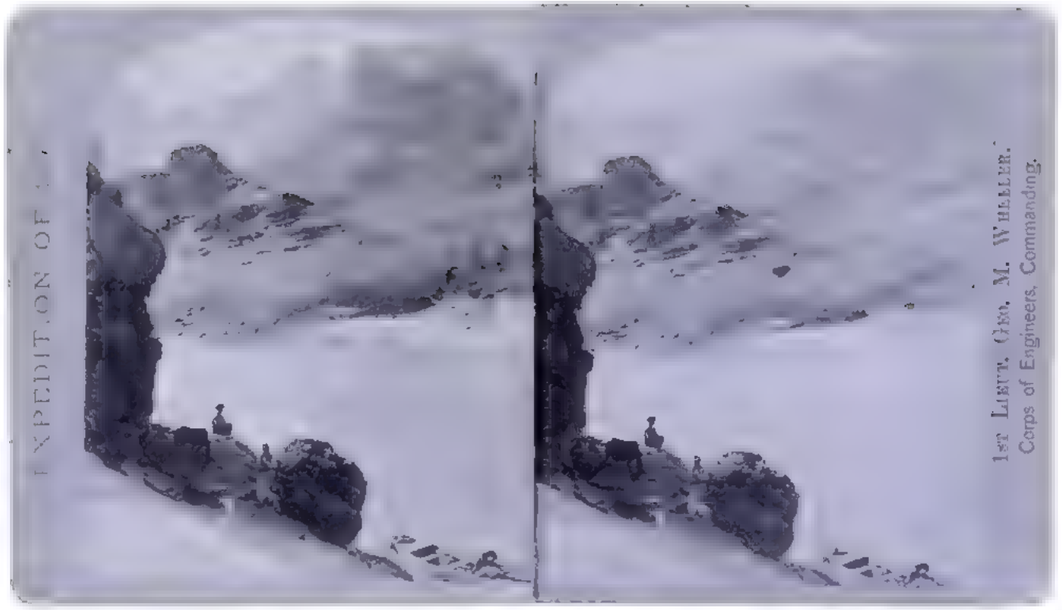
The wonder of the Grand Canyon of the Colorado River has been expressed to three generations through the medium of photography. Millions may have visited the South Rim, but hundreds of millions of Americans and Europeans have "known" the Grand Canyon primarily as a picture printed in a book or magazine, seen in a motion-picture travelogue, or glimpsed in 3-D through a stereoscope.

The seeming objectivity of the camera has been perhaps its claim to authority in the presentation of such awesome landscapes, so far removed in scale and character from scenes most persons know. But if the camera is comparatively objective, it is not impartial. The photographers of exploration have told us one thing, those of the early days of tourism something else, and those of our own wilderness-starved era may give us yet another image of the supposedly changeless.

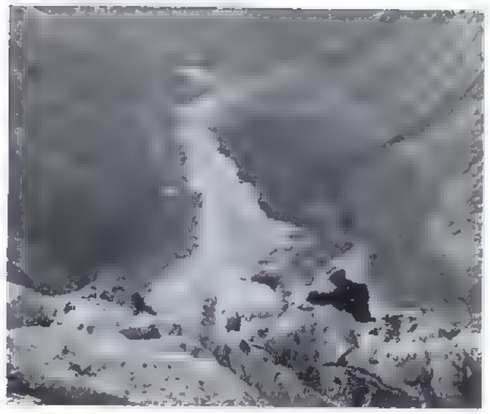
The first scientific exploration into the Big Canyon of the Colorado, the Ives expedition of 1857-1858, produced a report elegantly illustrated by two skillful artists. The resulting impressions of Black Canyon, Iceberg Canyon, and the lower portions of Grand Canyon are summed up in the romantic nightmare of Baron von Egloffstein reproduced on page 21. Major Powell, in his 1869 voyage through the length of the Green and Colorado river canyons, neglected to bring a cameraman, but no less than four photographers were associated with the 1871-72 Powell expeditions: E. O. Beaman, a professional photographer from New York; Clem Powell, nephew of "The Major" and assistant to Beaman; James Fennemore, a professional from Salt Lake City, hired when Beaman left; and John K. Hillers, a German immigrant employed as a general handyman for the party. It was Hillers who finally best mastered the difficult trade of making successful wet-plate negatives by the hundred when "home base" was a soggy little boat or a forlorn, overnight campsite. Below is half of a stereo made by Hillers in Marble Gorge, probably around the end of August, 1872. The boat in the background has Powell's "pilot chair" lashed to the deck midships, a life ring hung to each arm.

As the second Powell expedition did not go below Lees Ferry until 1872, Timothy H. O'Sullivan would seem to have been the first photographer to have reached the Grand Canyon itself. O'Sullivan, fresh from three years with Clarence King's "40th Parallel Survey," was chosen by Lt. George M. Wheeler to accompany his "Surveys West of the 100th Meridian." In September and October of 1871, Wheeler's party proceeded upstream from Fort Mojave through Black Canyon, to Diamond Creek in the lower Grand Canyon. The value of the difficult expedition up the river was questionable, as it covered the same ground that Ives had been over more than ten years earlier, but O'Sullivan made some magnificent photographs. Above is a stereo made at Grotto Spring; in the shadow of the rocks at the lower left is a little black tent—O'Sullivan's portable darkroom. On page 32 is one of a number of fine views O'Sullivan made in Black Canyon. Unfortunately, the greater part of O'Sullivan's scores of Colorado River plates were lost—not in the rapids of the river, but somewhere in transit between Yuma and San Francisco.

In 1872, William Bell served as official photographer for Wheeler. A view he made overlooking Marble Gorge is seen at the upper right, and on the opening spread of this article is a remarkable pair: a big view at the mouth of Kanab Creek and a stereo



Grand Canyon at Grotto Spring: T. H. O'Sullivan, 1871



Wheeler expedition at Marble Canyon. William Bell, 1872

Powell Expedition boats in Marble Canyon: John K. Hillers, 1872

showing the photographer making the very picture. The shot from the rim was unusual in the documentary images of the explorers, for not only was the wet-plate equipment of the day hard to lug about, but these men necessarily had the explorer's-eye view. The running river was the central fact in their day-to-day experience.

Bell experimented with dry-plate photography on the 1872 expedition, but with unconvincing success. The dry negative finally gave real mobility to the cameraman by relieving him of the need to operate a darkroom service in the wilds. A great turn-of-the-century photographer of the Grand Canyon, Henry G. Peabody, is seen below. A single horse could carry all his equipment—yet Peabody made mostly postcard-type views from the rims of the canyons. He saw something different in the Colorado canyons than what had been seen by the expeditionary cameramen.

Henry G. Peabody, ca. 1900

Black Canyon: T. H. O'Sullivan, 1871

The view at the left was made by Timothy O'Sullivan just above Mirror Bar in Black Canyon. His portable darkroom is in this case set up in the bows of his flatboat, The Picture. *At the right is a moment in Marble Gorge, captured by Philip Hyde in 1964.*

Hyde has written to us about the problems of documenting the canyons—and in some places his thoughts are what might have been set down by O'Sullivan.

"I don't know when I've had to work under more difficult—and exhilarating—conditions. There was never enough time, and if working with a view camera demands anything, it is time to look hard, to set up, to take down. There was some resentment on my part towards the river because it was really dominating, and there is always the illusion held by photographers that they should somehow dominate a situation. For twenty days the illusion faithfully remained an illusion. The clouds, rain, and threatening skies harassed me. I was frustrated two-thirds of the time because we were always behind schedule. Our 'extra' days evaporated while we dried out by driftwood fires or spent hours laboring out portages. . "

Marble Canyon:
Philip Hyde, 1964

Henry G. Peabody, coming to the Grand Canyon country around 1900, worked with the dry-plate negative that would have permitted O'Sullivan or Hillers or Bell to enlarge their view of the possibilities of photography and capture more of the diversity of the rivers and canyons. But a new age had dawned —the age of the casual tourist. Peabody,

admired by the great western field photographer William Henry Jackson as a master of the craft of outdoor photography, rode his pony up and down the rims of the canyons, translating onto glass the view that millions came to see.

Overleaf is a recent shot by Philip Hyde, a big impression of the new Canyonlands National Park.

Grand Canyon at Bright Angel Creek: Henry G. Peabody, ca. 1900

Stanton railroad survey in Glen Canyon, 1889

Today we again begin to see the river that Ives and Powell and Wheeler saw. Philip Hyde says, "Too many people experience the canyons in reverse—from the rim, looking down into the abyss. You cannot grasp the scope of the Grand Canyon from the rim, however you try. A canyon must be known from its bottom as well as its top to truly comprehend its scale, and certainly you cannot really know the Grand Canyon unless you know its maker, the river. And the river, for all its awesome power, is also the agent that creates the living space for man. It is at the meeting of the river and the rock that those little things happen that make the landscape have meaning and sympathetic scale."

Above we see Robert Brewster Stanton, Chief Engineer of the Denver, Colorado Canyon and Pacific Railroad, testing out the scale in Glen Canyon, where the waters of Lake Powell now wash the heights. At the right, the party of Philip Hyde and Francois Leydet test the scale of Marble Gorge.

Breaking camp: Philip Hyde, 1964

RIVER RUN

BY FRANCOIS LEYDET

A Wilderness Once Destroyed Can Never be Restored

At high noon on the first day of summer, 1965, we pushed off from the beach at Lees Ferry into the current of the Colorado River. The sun blazed down from a cloudless sky and heightened the warm tones of the Vermilion Cliffs to our right. After the sweaty work of launching the boats and loading our gear, we were glad to be out on the river, where the water cooled the air. The Colorado flowed cold, clear, fast — at nearly fifty thousand cubic feet per second, its highest level since the new Glen Canyon Dam, a few miles upstream, had gone into operation. Willows and tamarisks on the right bank soon fell astern; we rocked and rolled through the riffle at the mouth of the Paria River, our first small taste of fast water; then limestone cliffs, increasing rapidly in height, hemmed us in on both sides. This was the Marble Gorge of the Grand Canyon. Our destination, Temple Bar on Lake Mead, was 312 miles away.

An hour later, our three brightly painted boats glided under the silver arch of Navajo Bridge, which spanned the river nearly 500 feet above us. Two cars passed overhead, their drivers honking a startled salute. These were the last automobiles we would see for three weeks. We were entering the Grand Canyon wilderness.

For the first 240 of its 279 miles through the Grand Canyon, the Colorado is still a wild river, almost the same wild river that in the course of many million years has carved that most stupendous of all trenches in the surface of the earth.

"Almost," because much of the silt the river once carried through the Canyon, with which it ground and eroded its channel, and for whose red color the Spaniards named it "Colorado," is now being dumped into Lake Powell behind Glen Canyon Dam. And because the river's level is no longer controlled by the snow melt in the Rockies, but by the

(Philip Hyde photo)

Bureau of Reclamation. This introduced an element of uncertainty into our journey: we could never be sure that we would not wake up one morning and find insufficient water to float our boats—as had almost happened to us the year before.

Dams were to be much on our minds. At the time, the Bureau of Reclamation still hoped to build two massive dams in Grand Canyon, one in Marble Gorge, the other at Bridge Canyon near the head of Lake Mead. If these dams were ever built, such river journeys as we were undertaking would be a thing of the past, for nearly two-thirds of the river's course through the Canyon would be drowned by the dead waters of fluctuating reservoirs. Recently the Bureau of Reclamation has backed down, officially abandoning Marble Gorge Dam and agreeing to defer consideration of Bridge Canyon Dam. But the threat to the integrity of Grand Canyon is still imminent. Others, in and out of Congress, are vigorously pressing for construction of the dams, undismayed by the Administration's change of heart and undaunted by past congressional defeats. In the summer of 1965, however, it was the Bureau of Reclamation's threat which haunted us.

With every passing mile down the Marble Gorge, we knew that more of the scene around us would be submerged if its dam were ever built. We drifted by wind-rippled beaches; our eyes caught the golden splash of desert plume on the rocky talus slopes; our hearts beat faster as we pounded through Badger Rapid; we followed the flight of a red-tailed hawk whose scream reached us from far above. The Canyon walls rose higher with every mile, the various layers of limestone, sandstone, and shale clearly differentiated. By midafternoon, the rims that bracketed the sky were already a thousand feet above our heads.

In the hot stillness, punctuated now and then by the cascading scale of the canyon wren's song, we gradually became aware of a new sound. Little by little, it grew louder as we drifted along, and when we reached the bend where Soap Creek comes in from the right and the Colorado veers left, it exploded in a sudden, mighty crescendo. This was the voice of a major rapid, a constant, pulsing growl of such mesmeric power that the sound seemed to possess a substance of its own. We landed on the right above the rapid and walked down the boulder-strewn shore to look it over. On either side of, and below, the tongue—that V of smooth water that projects downstream from the mirror-slick stretch at the

Havasupai Creek (Philip Hyde photo)

head of the rapid — all was madness. Ten-foot waves leaped up and curved back on themselves in perpetual violence that finally spent itself in the tail waves far downstream.

Studying the rapid and deciding how to navigate it took longer than running it. Out on the still water above the rapid, I gauged my approach carefully, so as to hit the tongue exactly where I wanted to. Once on the tongue, I faced downstream and braced myself, as my boat gathered speed with every yard. Then with a great hiss the first wave was upon us. The *Susie Too* reared skyward, perched on top for an instant like the cap on a mushroom, then plunged into the trough beyond. Up, down, up, down, we hurtled. Jets of spray stung our faces; the roar of the rapid drowned out our voices. I strained at the oars to keep the boat headed into the waves and avert a broach which could lead to an upset. Gradually, I pulled to the right, out of the main current; and at last, my lungs heaving from the effort and my arm muscles knotting with cramps, I reached the eddy and rowed triumphantly to the beach. Between hitting the tongue and hitting the beach, perhaps a minute had elapsed.

The rapids occur at the mouths of side canyons, down which the flash floods of millennia have brought rocks and boulders that constrict and accelerate the river's current. There are more than two hundred rapids, large and small, in the Grand Canyon, or almost one to the mile. In between are quiet stretches, but even these are not uniform. Depending on the declivity, the flow may be fast or slow; the surface may be like a mirror, or marbled by swirls and eddies that bear watching by the oarsman. Thus the boat trip on the living river can never be monotonous.

After dinner that night, as our campfire flickered in the shadows and the sun's last rays gilded the top of the opposite Canyon wall, Martin Litton and I took a final look at the boats to make sure they were securely tied for the night. "You know," he said, "I don't think one *can* upset these boats." It happened the very next morning, in a minor unnamed rapid, so minor that Martin's attention must have wandered. From my position a hundred feet behind, I watched in disbelief as a big lateral wave caught him off guard and rolled his dory over, dumping our expedition leader (who had never upset in a half dozen trips on the river) and his passengers into the cold water. "It's the little ones that get you," Martin said after we hauled him out.

I was grateful to have this object lesson so early in the trip: the spill demonstrated the probable effect of even a moment's inattention by the most experienced of oarsmen; and the ease with which the situation was handled showed to even the first-timers among us that an upset is not necessarily a catastrophe. Only six persons have lost their lives boating through the Canyon since Major John Wesley Powell first ran it in 1869, and more than a thousand persons ran the river in 1966 without a serious accident.

Below 24½ Mile Rapid we entered the most beautiful section of Marble Gorge. The Redwall limestone appeared and formed the lower layer of the Canyon walls. Throughout the Grand Canyon, this limestone is perhaps the most striking feature, a vertical red cliff five hundred or more feet high. Here, too, the Redwall rose perfectly sheer, often straight from the water's edge. The upper strata were set back in a series of tiers and slopes, sometimes out of sight, sometimes curving high above the end of an aisle, or glimpsed, as if through a keyhole, in narrow slots cut by tributary creeks. Shafts of sunlight slanted through these slots and shone on the dark water of the river. The limestone was beautifully fluted at the water's edge. Higher up, it was decorated with bays and alcoves and innumerable caves — the openings of anastomotic tubes, solution channels which follow the eastward tilt of the bedding plane of the rock and are likely, according to experts, to cause a major loss of water if Marble Gorge Dam is built.

Gradually, as the Redwall towered higher and higher above our heads, it became even more fantastic. It was horizontally banded with light and dark stripes, like peppermint candy. We came to a point where, a third of the way up the Redwall, two tumbling cataracts of clear water gushed right out of the cliff. The streams were broken up by the banding of the rock into a series of stair-step falls. Maidenhair fern grew thick alongside; redbud was past its bloom, but scarlet mimulus displayed startling flowers; poison ivy and horsetail grew in a mass of vivid green that was in striking contrast to the Canyon's reds and browns, and the dustier greens of its desert vegetation. Major Powell named this oasis "Vasey's Paradise," in honor of a botanist friend. "Vasey's Paradise lost," I thought to myself, as I pictured the still waters of a hypothetical reservoir slowly climbing, burying the marvelous greenery, engulfing the clear springs, finally submerging the candy-striped walls that had so enchanted the Major.

Submerged, too, would be Redwall Cavern, where we stopped for lunch a little below Vasey's. A hundred yards wide at its mouth, thirty yards high, and fifty deep, the cavern had been gouged by the flowing river. I lay down in the sand, contemplating the pink curve of the cavern's roof, the blue curve of the sky, the red curve of the Redwall's opposite face, and the green curve of the river between, and marveled at the symmetry and harmony of it all. Swallows swooped in and out of the cave, scarcely pausing as they delivered morsels to their voracious nestlings.

It was only a short run that afternoon to the site of the proposed three-hundred-foot-high Marble Gorge Dam. Here we saw our first evidence of civilization since Navajo Bridge. Tunnels had been bored into the face of the Redwall to test the quality of the rock that would form the abutments of the dam, and large heaps of tailings littered the opposing beaches. Engineers' trash lay scattered about, and defacing the cliffs on either side of the river were steel scaffolds two hundred feet high.

We moved on and camped at the mouth of Spook Canyon, where cottonwoods and willows grew, watered by the small trickle of a spring under an overhang festooned with maidenhair fern. The most significant thing about this camp was that it was the first one on our trip that would not be inundated by any currently proposed dam. For the next 102 river miles to Kanab Creek (most of them within or bordering on Grand Canyon National Park) the river would be allowed to flow.

Of course, if Marble Gorge Dam were built, these hundred-odd miles would be inaccessible to boatmen, since there is no place between the dam-site and Kanab Creek where a boat can be brought to the river. But at least in this short section of the Colorado, the right of the wild animals and native plants to live as nature had fit them to do would not be abrogated. This thought cheered me greatly in the days that followed.

We passed the mouth of the Little Colorado, whose turquoise-blue waters met the main river's green current in a line as sharp as that between two colors on a flag. Now we were out of the Marble Gorge, and the Canyon opened wide, revealing its buttes and temples and pyramids and amphitheatres — the intricate yet marvelously logical architecture that makes the Grand Canyon one of the world's supreme wonders. The lizard's-eye view of the Canyon from a river beach is no less breathtaking than the raven's eye view from the rims. What the latter may gain in compass the former gains in intimacy. The boatman — or the hiker who descends the trails to the river — feels a oneness with the Canyon that observers on the rim never can.

We boomed through Hance Rapid, one of the two or three roughest on the river, and my left oarlock broke when I was a third of the way down. Unable to get a spare oar into play, I made it the rest of the way on one oar. Shortly below Hance, we entered the Upper Granite Gorge, walled by rocks older, perhaps, than biological life itself — as old, almost, as any rock exposed on this earth. The black Archean schist, sharply uptilted, sparkling with mica, had been ground and polished by the river into marvelous flutings, potholes, and smooth, rounded sculptured shapes of infinite variety. Through it writhed dikes of pink granite — the two rocks together giving evidence of the unimaginable heat and pressure that had metamorphosed them into their present condition, millions of centuries before the river was born. The Kaibab limestone of the rim had been laid down at the bottom of a shallow Permian sea some two hundred million years ago. The Archean schist that walled the narrow, thousand-foot-deep Inner Gorge was, by most modern estimates, one and three-quarter billion years old.

On down the Inner Gorge we plunged, through rapids with names such as Sockdologer, Horn Creek, Granite Falls, Hermit, Dubendorff, names famous (or infamous) to Colorado River boatmen. We ran them all, with not an upset or lining or portage, and only an occasional hole to patch. In the heat of noon the streamside rocks, especially the black schist, were too hot to touch. But we found places to cool off — such as in exquisite Elves' Chasm, a narrow slit canyon through which Arch Creek tumbles down mossy chutes from emerald pool to emerald pool.

We took a day off the river and hiked up Tapeats Creek to one of its twin sources, Thunder River. Snow melting on the high Kaibab Plateau percolates down to mysterious underground reservoirs and streams, and gushes out of two large openings in the face of the Redwall. Dropping two or three hundred feet, the water merges and divides and subdivides and merges again in a wonderful complex of fan-shaped falls. The blowing spray creates a delightful microclimate beside and below the falls in which grow ferns and mosses, willows and cottonwoods. Cottonwoods and cattails line the bank of Tapeats Creek itself, while only yards back, a desert garden of beavertail and catclaw, prickly pear and bar-

Journey's end: Lake Mead recreational area
(Philip Hyde photo)

rel cactus attests to the Canyon's dry climate.

We reached Kanab Creek at noon the following day. The stream ran shallow and tepid in its narrow, winding canyon between fifteen-hundred-foot-high pink walls — a Grand Canyon in miniature. As we followed the creek back, a great horned owl flew silently by. I saw tracks of racoon, bighorn sheep, and bobcat. And the ever-present lizards: chuckwallas, utas, whiptails, desert scaly lizards and their cousins. In the bottom of the Canyon, a mile below the rim and many more from the nearest telephone or motorcar or even outhouse, I had always found the sight of even a mere lizard rather humbling. The Canyon belonged to it, and to its prey, and to those creatures that preyed on it or on the prickly desert growth. Only they were equipped to live off this testing environment. Modern man could subsist here only by importing his food — as we did in our boats, or as they did at Phantom Ranch (sole human habitation in the whole Inner Canyon) for the tourists who arrived there by mule or foot from the rims. In the Canyon wilderness man should never be more than a polite visitor.

At least that is my attitude. Dam proponents, on the other hand, argue that not only must man make maximum use of the river's fall through the Grand Canyon for hydroelectric power, but that the reservoirs created by dams would enable hundreds of thousands of people every year to visit those reaches of the Canyon now accessible only to "a few hardy, adventurous boatmen." River-runners are not so few: from 1869 through 1964, about nine hundred men and women navigated the river. In 1965, more than seven hundred people ran it. The next year the figure was more than a thousand. Nor are they all "hardy" or recklessly "adventurous." A party ahead of us in 1965 included a 61-year-old grandmother and a 12-year-old child. But that is really not the point.

The point is that hundreds of thousands of people a year in the bottom of the Canyon would wreck the place even if getting them there did not involve damming two-thirds of it. And I am not thinking only of the mess of tin cans, paper, plastic containers, and uncovered toilet areas which now graces the shores of Lake Powell in Glen Canyon. I am thinking of the fact that hordes of people, no matter how well behaved, would destroy the very quality that makes the lower depths of the Grand Canyon worth visiting: the solitude, the tranquility, the overwhelming presence of Nature as it was and as it worked long before man's ancestors descended from the trees. It is this quality, more perhaps than any other, that makes the river trip a unique experience — the fact that one can go from Lees Ferry to Lake Mead with a reasonable chance of *not* meeting other human beings, that no transistor radio blares from a neighboring camp, that masses of visitors have not scared away the wildlife, that, drifting along, one can still on occasion see a bighorn sheep or a bobcat, a beaver or a mountain lion.

Does every American have a constitutional right to set his foot on any square foot of the nation's public land? I hope he does. But it does not follow that the Government is duty-bound to *thrust* every square foot of the public domain squarely beneath his boot. In fact, there are areas that deserve to be *protected* from mass invasion, that are presently wilderness and should remain wilderness, and to which access should be limited to those willing to sweat a little. For a trampled wilderness is no longer a wilderness, and a wilderness once destroyed can never be restored.

That there are values in wilderness that must be defended against the assaults of progress was expressly recognized in 1964 when the Wilderness Act was passed into law. The Act gives statutory protection to large roadless areas from which "improvements" by technological man are to be banned. If ever an area in the nation deserves the protection of this Act, it is the Grand Canyon. And to this should be added the protection of the National Parks Act, by extending the present illogical boundaries of Grand Canyon National Park and Monument to encompass the entire geographical Grand Canyon — from Lees Ferry to Lake Mead. Only then would the Grand Canyon be safe from spoliation.

The minute we departed Kanab Creek and headed downriver, we entered the area of impoundment of the proposed Bridge Canyon Dam, whose seven-hundred-foot-high concrete bulk would plug the river 93 miles farther down. And just as in the Marble Gorge, so too here, with every mile we progressed, we knew that more of the Canyon walls would be buried under the reservoir. After a good run through Upset Rapid, we reached Havasu Creek at noon. The entrance would be easy to miss for one who had not found it before. It is like turning from the street into an inconspicuous alley. One moment we were on the river, hugging the left wall so as not to be drawn into the rapid. Seconds later we were rowing on clear, blue-green water up a narrow passage in the cliff. The cleft was overhung, twisting, and nar-

Continued on page 71

The Use and Misuse of a River

BY DANIEL B. LUTEN

The Colorado River, like much of difficult Nature, calls to mind the complaint that if the good Lord had been foresighted he would have arranged to have the sun rise at day's end so as to provide light at night when needed. The Colorado, in an arid, parched land of high mesas, sandstone cliffs, and deep cut canyons, is only one river, not large, not clean, barely sweet, seasonally difficult. No wonder it is abused.

Statistically, it is a mighty stream. Its basin is a twelfth of the area of the forty-eight states, 245 thousand square miles or 157 million acres. It stretches 1,400 miles from the tules and shifting channels at the head of the Gulf of California up to its remotest source at the far end of the Wind River Mountains in Northwest Wyoming.

At its source, the Colorado contends for watershed with the Columbia's ultimate tributary and with one of the many streams carrying tribute to the Mississippi. If the Rockies are the ridgepole of the continent, then the Colorado Basin is its south-facing roof.

The first Caucasians to cross the belt of the continent went directly, if tortuously, from east slope to west slope, from Missouri to Columbia waters. But in later years more than 95 of each hundred travelers have made the crossing through the Colorado Basin. Whether by horse, by wagon train, by rail, by automobile, or by plane; whether through Green River, Wyoming, through Vernal or Green River, Utah, through Needles, Blythe, or Yuma; whether with feet cooled in the river's silty water or head lost in the airline's movie, all of those westward bound have encountered the Colorado Basin and its river.

The basin is rimmed by great mountains, as a great river's basin should be. From northeast to east are the Wind Rivers, (13,800 feet), the Rockies (14,400), and the San Juans (14,400). On the west are the Wasatches and the Uintas (13,500). Through two gaps in the eastern rim, the one just south of the Wind River Mountains in Wyoming, the other west of Albuquerque, most of the people have passed.

Here is the Colorado, then, with a grand setting, with a fair share of the land for its province, with its face to the sun. What makes it special? What purpose does it serve that would cause it, if it could, to petition against man's interference? Why should it complain?

In other lands, a river's birthplace is a mountain in alpine meadows; its youth is spent brawling and carving the lower slopes of forested hill country; in its full maturity it meanders through verdant, flatland farms. Its workload is light, its free time high. It has not lost its right to go on a rampage now and then to remind men that it is still a free river, that it will cooperate only on its own terms. The Colorado's youth, too, is in mountain brooks, but it drops quickly from forest meadows to a dry land, where for millions of years it has worked as a drudge, hauling dirt to the end of time, and the task only begun. No help comes to it from lowland tributaries; all of its strength springs from the northern mountains. Incised deep into the rocks, it has no chance to escape from its ancient meanders, to explore new ways. Never a free day, never a moment's relief from work.

But while at this endless task, it has still built a land of magic and witchcraft.

One would suppose that a river with the character to cut such canyons would have a history clear and distinct, sharp and purposeful. Regrettably this is not so. Geologists still find some things not clear at all. Through much of the past, the heart of the basin — the canyonlands from the Grand Canyon to five hundred miles upstream

— was flat and low-lying, or under the waters of the ancient midland seas that covered the region of today's Rocky Mountains. Accordingly, it is largely a region of sedimentary and metamorphic rocks which go back one and a half billion years to well before the beginning of the Paleozoic era. At one interval during the Jurassic Period, the region was desert with dunes of red, pink, and white sand that swept in from the west, ultimately leaving deposits almost two thousand feet deep. Later the sea returned and covered the dunes with sediment, thus preserving them as sandstone.

Late in the Cretaceous period, the sea retreated slowly to the east as western North America began to rise. New hills appeared to the west of the basin, and they washed away to the east as they rose, leaving great depths of sediment. The Kaibab Uplift, a southerly fringe, may have occurred at about this time. It is a fold 100 miles long and 25 miles wide, running north-northwest from Flagstaff almost up to Kanab, on Utah's southern border. When you drive northward from Williams to the South Rim, or southward from Kanab to the North Rim, you are climbing up the spine of a broad swell that has been cut through at the crest by the river. The Grand Canyon is sliced through the top of a plateau. It hardly seems the easiest way to the sea, but conditions change and, presumably, it was once the line of least resistance.

By the end of the Cretaceous period, the region had become a great plain sloping off to the east — but then the eastern edge of the land began to rise. This was the beginning of the Rocky Mountains and of the Colorado basin, too, in a sense. Before the final development of the basin began, however, most of those enormous depths of Cretaceous sediments disappeared. Only their fringes remain to form the high plateaus on the margins of the basin. Where they went is uncertain. Apparently, they did not end up in the Gulf of California and were not, therefore, carried away by today's river. Perhaps when coastal mountains rising to the west made the region dry again, the sediments simply blew away, as the red Jurassic sands had blown in earlier.

Quite recently, perhaps ten to twenty million years ago, the streams which exist today settled into their drainage pattern. Because these modern streams meander as if wandering across a flat, featureless plain, we must suspect that the basin was just such a land, close to sea level, when the stream patterns became established. Only then did the Colorado River find its way across the top of the Kaibab plateau, already an elevated fold, but still at a low altitude.

During the past few million years, the entire region, especially near the Grand Canyon end, has risen more than five thousand feet. Along with this lifting and tilting, a good deal of gentle folding and faulting has occurred, the basis for the great series of plateaus, edged by bright cliffs that lie within the basin today. Despite all of these changes, the bedding remains almost flat.

With this last uplifting, the rivers, caught in their meandering paths, set to work at erosion again.

Much of the region's past shows in the shape of the canyonlands. Quite apart from the canyons, it is a region of plateaus, usually sloping gently upward toward the south, then terminating in abrupt cliffs that stretch for miles across the land. These cliffs are not the canyon walls, but quite a separate feature.

The river itself — what is it really like? First, it is in an arid land; the rainfall over the entire basin averages but ten inches per year. The only parts which are at all well watered are the highlands. On the plateaus, annual precipitation may reach twenty inches per year. Such areas include the drainage of the Green River in the foothills of the Wind River Mountains, the highlands reaching southwestward from the Uinta Mountains of Utah, a long stretch of the western slope of the Rockies from the northern to the southern border of Colorado, and a surprisingly large strip of Arizona highland, extending southeastward from the south rim of the Grand Canyon along the height of land separating the Little Colorado from the Gila River drainage.

In the high mountain crests (especially those which lie athwart the eastward-moving winter storms) precipitation may be as great as forty or fifty inches. Most of this comes to the mountains as snow and can accumulate in cirques and leeward basins to great depth. But, except in such sheltered reservoirs, snow is largely gone from the highlands by June. The seasonal pattern in river flow shows a great wave of snow water in the spring, reaching a peak in June. By September and October it is gone, and the main stream's flow may be but five percent of what it was at flood.

Flood flow is deceptively inconspicuous in many parts of the river's course. In Glen Canyon, the river rises only ten feet at flood, but the current is astonishing. At low water, the stream wanders among sand bars, almost lost. In the Grand Canyon, rock-strewn rapids are totally submerged in a mighty flow at high water. In 1869 John Wes-

COLORADO RIVER SYSTEM

ley Powell saw highwater mark (indicated by debris caught in crevices) a hundred feet above stream level in Cataract Canyon. Was there some obstruction there that backed water up, or was this a record of a flood far greater than any we have seen?

One other pattern of rainfall must be mentioned. In the arid basin lands, summer thunderstorms are a spectacular part of the landscape. Occasionally, precipitation from these may be great, and rarely, it may cover wide areas. In contrast to the high-elevation winter snow, or thin rain percolating into the soil, these summer rains are intense and fall on land which often has no top soil at all. As a result, stream flows respond as quickly as on city pavement. The overall contribution of summer rain to annual flow is small, but record floods on most of the tributaries originating in the canyonlands have been measured in the thunderstorm months of July and August. Powell mentioned several occasions on his first trip down the river when the precipices above the party became alive with waterfalls within minutes after rain began. He also spoke of flash floods in the side canyons, but said of one that he could outrun it, so greedily was the first water drawn into the sand.

The abundant water from the snow fields comes down through cool valleys of little cropland and limited meadow areas into a lower latitude desert, the hottest land in the New World, a land with fertile alluvial bottoms and with virtually no rainfall. Here is a land for agriculture and here is water to make it bloom. Whose land, whose water?

The water is really not very much. Caught in the rapids of Cataract Canyon or in the June flood in Glen Canyon some might not agree. But of that average of ten inches of rainfall over the basin, only an eighth (called "virgin" flow) ever becomes river. Most of the water evaporates from the ground or is transpired by the leaves of the basin's plants. Today, the fraction of rainfall which gets to the Gulf of California is even less, and irrigated agriculture threatens to consume the virgin eighth to the point where the river at its mouth in summer will become only an effluent trickle of brine, a vehicle for the minerals and salts which percolating waters picked up on their way to a stream.

A great river, yes. A long river, yes. But big, no. The Colorado's mean annual virgin flow has been set at 15 million acre-feet at Lees Ferry and about 18 million at its mouth. By comparison, the Amazon averages 5,400 million feet at its mouth per annum, the Congo 1,000

million, the Mississippi 440 million, the Columbia 184 million, and the Yukon 130 million. By these standards, the Colorado's flow can hardly be considered more than the spurt of a garden hose. If all of its water were used in the hot lowlands of Arizona and California at the rate of five acre-feet per acre per year, the land irrigated could be included in a square only 75 miles on a side.

But there's more to a river than basin and stream. A river's task is erosion. It is done with its task when its watershed is flattened to sea level. No river succeeds, but some come close. Its weapon is the energy of water on high slopes, all of which has been dissipated before reaching the sea. Most of the energy turns into heat, but a little goes into the work of wearing down the watershed.

The Colorado displays an impressive record of erosion, but the point it makes is not that the task is done, but rather, how much still remains. The main streams, fed by dependable annual floods, have carved impressive canyons. The lower tributaries, fed by undependable summer thunderstorms, have not been able to keep up. Even the main canyons have a long way down to go. Geological uplift is far ahead of degradation, as the accompanying table illustrates. An old stream, nearly finished with its work, would show low elevations until close to its sources. The Colorado begins its climb to its source in its lower canyons. For this reason, it has the potential for substantial hydropower development in its main stream. Compare this to the Mississippi, where major hydropower developments have mainly been limited to such remote tributaries as the upper Tennessee or the far Missouri.

Nonetheless, erosion *is* proceeding, and the best testimony is the enormous burden of sediment and dissolved solids carried by the river. Sediment burden is not easy to measure, but a rough value given for the Colorado is 0.5 percent by volume. Half a hundredth of 15 million acre-feet of water each year is 75 thousand acre-feet of sediment. If the runoff of water is 1.25 inches per year (one-eighth of the 10 inches of precipitation), the runoff of sediment is 0.006 inches per year, or 6 inches per millennium. The present rate of uplift in the canyonlands region may be about the same. While it appears, then, that the river keeps up with the rising land, it does not do so uniformly, and we may suspect that the canyons are deepening their bottoms and approaching sea level while the mesas are still rising. The landscape is becoming more spectacular as we watch it, at a rate of one-half foot a millennium, 500 feet each million years, and 5,000 feet in ten million years — and that, perhaps, is how long it has taken the river to carve 5,000 feet of canyon.

The distribution of sediment and dissolved salts is given on the accompanying map. As might be expected, little comes from the snow-melt waters of the high mountains; most comes from the arid basin regions, the Little Colorado, the Dirty Devil, the Paria, and the Escalante.

And most of it moves at high water. The small streams pour vast loads into the main stem's channel in their summer floods. The river sweeps it downstream with next spring's snow melt, spreads it across the bottomlands, and fills the head of the Gulf of California with smooth, rich, and irrigable land.

Look now at what we have done to this region, to this land of endless high plains, of range after mountain range, of narrow beaver-meadowed valleys, of intermontane "parks," but also of juniper- and sage-clad plateau lands, of bare sandstone rocks, and incised canyons. Keep in mind the nature of the 19th century invasion. The floods of migrants moved onward to the promise of yellow California gold or green Oregon fields, but some — perhaps with a greater Biblical literacy — saw in this region a land of both oasis and wilderness. They had left the East in a spirit of wanderlust, but also in search of a new security. The former urge might well have expended itself before arrival. The latter found, in the irrigable land and snow-fed streams, a substratum upon which, with infinite industry, they built an oasis of security and usefulness. Around it remained a wild land, a Biblical desert of scorching summers and bitter winters. It was reminiscent of ancient memories but so foreign to the forested hills, the swamps and river bottoms, the marshlands, and prairies of the eastern New World as to be a new kind of wilderness.

All of the old conflict between love of wilderness and need for pastoralism, between wanderlust and homesickness, between concern for what is beautiful and what is useful rode with them into these mountain valleys, these desert ranges, these sparse canyon streams. They built little dams everywhere in the headwaters and diverted water onto the beaver meadows. They raised fruit trees, a few vegetables, grain, hay, and livestock. Lower down, the dams were a little bigger, the meadows broader, the canals, tunnels, and ditches, longer. The water they used depleted the river flow but little.

While this was going on, however, the migrants who had gone on swarmed against a limiting western coast.

They also learned how to use water, more and more of it. While those of the upper basin diverted small streams into cool fields, those in the lower basin, especially in southern California, had expanding ideas. First they turned to nearby coastal hills, then to the California mountains, then, finally, to the yield of the remote mountains of Wyoming and Colorado. The land they sought to irrigate expanded from the narrow alluvial plains of coastal valleys first to the bottomlands of the Colorado River where it bounds California, and then to the Imperial Valley and Arizona's central lowlands of the Salt River. All of this was hot, dry, thirsty land. It needed not just one or two feet of water a year as the meadows did, but four, five, and even ten feet. The prospect of limitless demand aroused concern upstream. Attitudes toward water and water law had developed in a time of limited need and local use. The twentieth century saw the rise of an ogre of unlimited need and interstate demand.

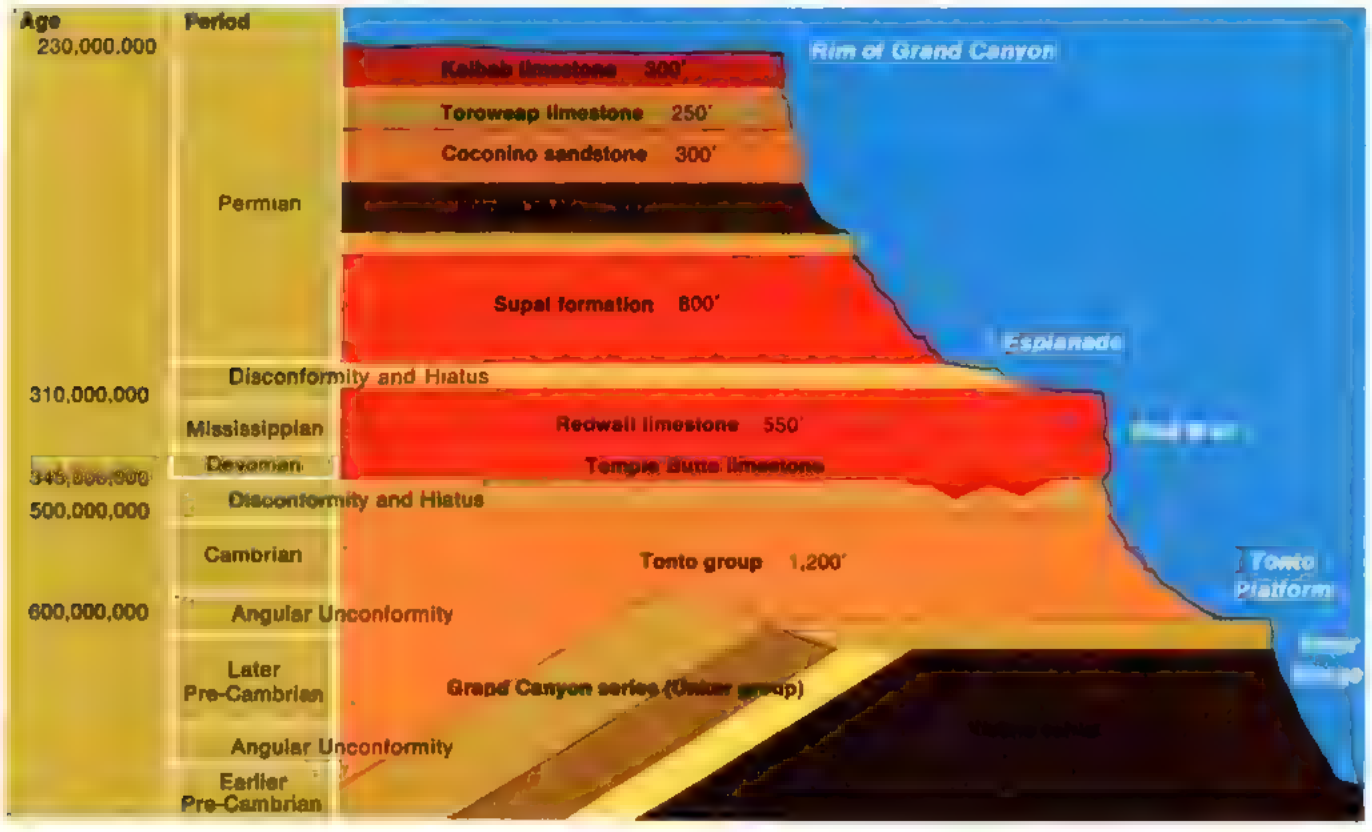
At first attempt at resolution was the Colorado River Compact of 1922. It divided the water equally between the upper and lower basins, with Lees Ferry as the dividing point. Expecting that virgin flow would average 15 million acre-feet a year at Lees Ferry, but knowing that individual years would vary widely, the upper basin users agreed not to deplete the river's flow below 75 million acre-feet for "any period of ten consecutive years."

Unfortunately, the twenty-odd years of records on which the Compact was based appear, in retrospect, to have been unusually wet, whereas more recent years, especially the early thirties and early sixties, have been unusually dry. Tree-ring evidence going back to the "great drought" of the thirteenth century suggests that few periods have been wetter than the first decades of this century.

The Compact assured the lower basin that upper basin states would never make "area of origin" demands on all the water, and, at the same time, assured the upper basin that lower basin states would not develop uses for the entire flow and then seek enduring rights through court or congressional action based on the fact of development.

Subsequently (in 1944) a treaty assured Mexico of a tenth of the river's flow, or 1.5 million acre-feet, half of which might be made up of irrigation waste water from developments close to the border. The most recent major allocation of Colorado River water was by the United States Surpreme Court, which settled contention between California and Arizona by cutting California's share of the river to 4.4 million acre-feet and granting Arizona rights to 2.8 million feet. Nevada got 300 thousand. The

Rock sequence in the Grand Canyon (after King)



court decision is of little importance, of course, until Arizona and upper basin developments actually take the water to which they are entitled.

Pending upper-basin development, California has withdrawn larger amounts of water, in part to retrieve earlier damages resulting from overpumping of the groundwater in the Los Angeles basin. Up until the most recent years of extremely low flow, no one in Los Angeles has really suffered from water shortage, although hydropower generation has sometimes been less than desired. Never has concern for supply in the lower basin been great enough to require full use of Lake Mead. This reservoir, filled only twice in its history, was by no means full even in the wet year of 1952 when 8 million acre-feet of water reached the Gulf of California. The requirements of flood control and the wish to increase power income have outweighed any notions of providence with water.

But with the dry years of the early sixties and the simultaneous need to fill the enormous new reservoir behind Glen Canyon Dam, pinches have been felt. Water was discharged from Lake Powell before levels were high enough for power generation, so that Hoover Dam generators and downstream irrigation could continue. The Colorado River Compact would not seem to have required that this be done. But the Compact envisioned beginning with reservoirs full, not empty.

With assurance by the Compact that the lower basin would continue to get water, Hoover Dam was built in the early 1930's to create a reservoir capable of storing two years flow of the river, capable of controlling floods, and capable of generating enough power ultimately to pay for itself and provide financial aid for downstream irrigation works. Prior to the Compact and Hoover Dam, the actual uses of the lower basin had been limited to irrigation in the bottomlands of the California-Arizona border. In 1939, however, shortly after the dam's completion, the All American Canal, the largest diversion from the entire river, began to move water into the Imperial Valley. That same year, the California Aqueduct of the Metropolitan Water District began to move water into the Los Angeles basin.

The next stage in development was to be the preparation by the upper basin of storage facilities to permit it to develop and use its half of the river and at the same time to meet its commitments under the Compact. This was to be followed by facilities to take water from the river across western Arizona into the Salt River Valley near Phoenix, where farmers were already overpumping

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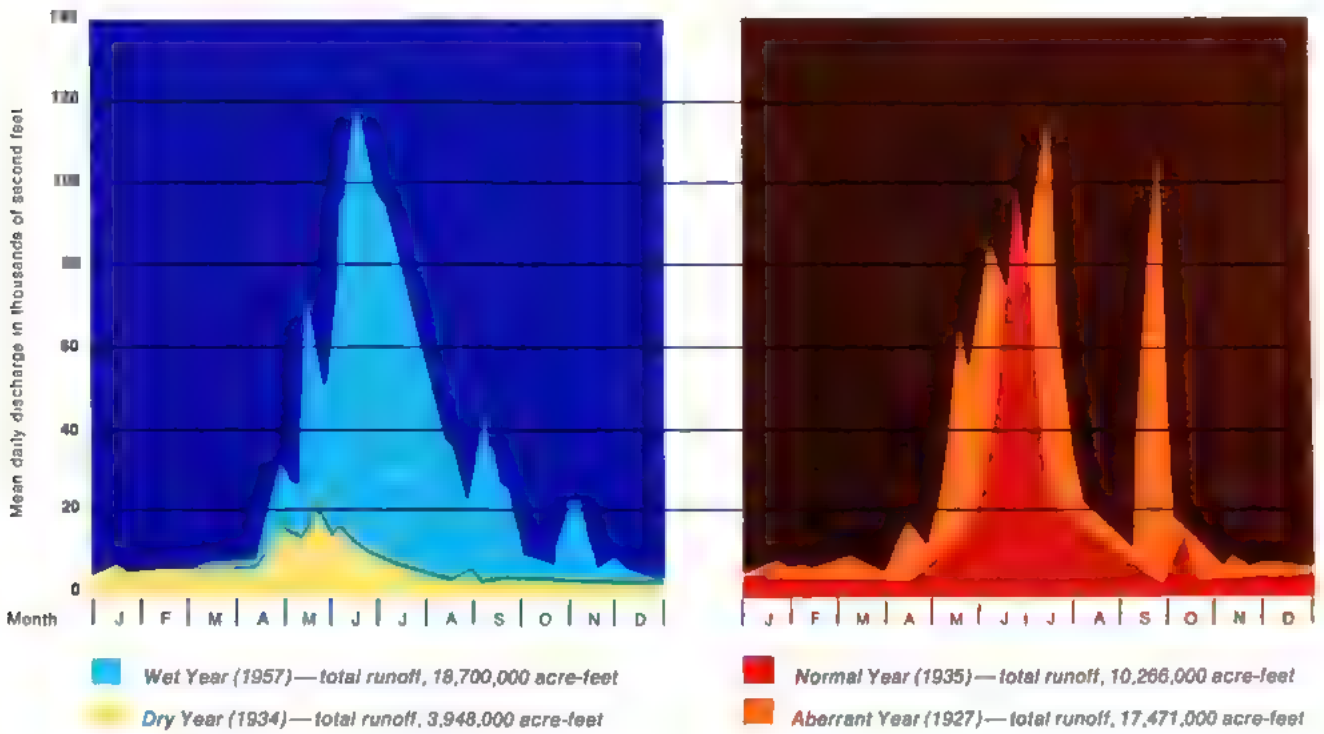
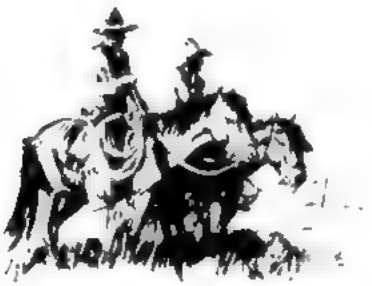
Comparative annual flow of the Colorado River


Mean daily discharge in thousands of second feet
120
80
40
20
0
Month
J F M A M J J A S O N D
Wet Year (1957)—total runoff, 18,700,000 acre-feet
Dry Year (1934)—total runoff, 3,948,000 acre-feet
Normal Year (1935)—total runoff, 10,266,000 acre-feet
Aberrant Year (1927)—total runoff, 17,471,000 acre-feet



THE MYTHIC WEST OF W.H.D. KOERNER

BY W. H. HUTCHINSON

Modern America's mythus of the last American West rests solidly upon the foundation poured by popular fiction subsequent to *Riders of the Purple Sage* (1912). It is held here that such as Owen Wister, Clarence E. Mulford, and Harold Bell Wright were so many John-the-Baptists for Zane Grey and his emulators and imitators, who transmuted this last West into the solemnity of horse opera. The later superstructure of the myth was reared by cinema, radio, and television upon that same fictional foundation — followed altogether too faithfully. It is in this context that William Henry David Koerner finds his proper place in the frieze of our national Powdersmoke Pantheon.

He was a babe in arms (born November 19, 1878) when his family left Schleswig-Holstein to escape its Germanic repressions and stratified society. Early in 1880, the family came to rest at Clinton, Iowa, an environment seemingly ill-suited to growing artistic sprouts. Sixteen years later, this cultural drawback apparently overcome and a sheaf of self-taught work making his major baggage, W. H. D. Koerner joined the national tide of rural emigration, making his way east to Chicago, where he landed a job as staff artist on the *Tribune*.

Six years on the *Chicago Tribune* gave him those basic skills upon which he built so well. The staff artist was the news photographer of that day and Koerner used hand and eye and memory to capture what lens and film and automatic coordinators do today. From on-the-spot sketches to the final press plates, he worked always between the jaws of deadline and eye appeal. This rigorous, pressure-packed apprenticeship was complemented by study at the Francis Smith Art Academy, "three flights up on Wabash Avenue." It was expanded and sharpened by almost two years in Battle Creek, Michigan, as art editor of *The Pilgrim Magazine*.

This title seems to have been a masthead misnomer, because Koerner edited his own work, in the main. Cover illustrations, cartoons, story drawings, advertising sketches — whatever was needed flowed from his hand. By signing fictitious names to these offerings, by changing his style to suit the need, he gave the short-lived literary *Pilgrim* an aura of varied artistic talents and his skills an added versatility. Battle Creek was the home of the famous health-cereal family comprised of *Grape Nuts*, *Postum*, and *Post Toasties*, and commissions to design their containers and to illustrate their magazine advertisements buttressed Koerner's assault upon New York in 1905. Two years of such advertising illustration, as well as study under George Bridgman at the Art Students League, saw him well enough established with New York outlets to take a significant step in his consistent quest for professional advancement.

The great Howard Pyle, father of American illustration, no longer conducted a formal art school at Wilmington, Delaware, but he did conduct a critical seminar in his own studio between eight and nine each morning. Pyle's sole criterion for acceptance at these sessions was that participants already be earning their living as commercial artists, a stricture that banned the dilettantes, the self-expressionists, and the untrained hopefuls. Koerner's fellow students and critics included such as

Anton Otto Fischer, N. C. Wyeth, H. T. Dunn, and Frank Schoonover.

Unseemly contradiction cannot deny that these men, perhaps the finest blossoms from Pyle's garden of instruction, gave the visual glow to popular fiction's Golden Age, an age that ended with the end of national innocence. Both H. T. Dunn and N. C. Wyeth preceded Koerner in illustrating western fiction, but in time and for cause the fictional West belonged to the immigrant from Schleswig-Holstein.

He truly crossed the line into non-advertising art with a cover for *Harper's Weekly* in 1910. This, like much of his earliest fiction work, was a North Woods scene that reflected the popularity of the moose-and-snowshoe genre before it was supplanted by the literary horse opera. His North Woods drawings were marked by authentic details absorbed while spending summers in Maine, and they were bulwarked by hours of research in the New York Public Library, no great train trip from Wilmington.

This period first showed his story versatility. He turned his hand to such varied items as "Trail of the Tammany Tiger," "A New England Pippa," "Secrets of the Chain Store," "The Pagan Madonna," and "Five Months on a German Raider," and to patriotic posters when his country entered Europe's war against Germany. This versatility, together with his speed and dependability, broadened his markets in the post-war period, until his commissions made a muster roll of the best popular periodicals then publishing: *Bluebook* and *Redbook* and *Woman's Home Companion*; *Good Housekeeping* and *Scribner's* and *McClure's*; *Harper's* and *American* and *Collier's*; *McCall's* and *Pictorial Review* and Hearst's *Cosmopolitan*. He did not relish Hearst's attitude towards artists, and refused a Hearstian offer of an exclusive, long-term contract at a guaranteed and substantial salary. This refusal may have been made easier by Koerner's gravitation towards the *Saturday Evening Post* as its masterly

editor, George Horace Lorimer, brought it to pre-eminence in popular fiction and raised its circulation from 1,964,479 copies in 1920 to 3,107,573 in 1931 (a weekly *reading* audience of 10,000,000 is not an incredible projection from the latter figure.)

A joyous literary carillon still is played by the names of those whose work Koerner illustrated. They ranged alphabetically from Achmed Abdullah to I. A. R. Wylie, and included such as Joseph Hergesheimer, Thomas Beer, Don Marquis, William Faulkner, Willa Cather, and Ben Ames Williams. He gave visual form to Earl Derr Biggers' "Charley Chan," to C. B. Kelland's "Scattergood Baines," and to a crowded kennel of Terhune's collies.

These names and the magazines wherein they and Koerner appeared together are warranty of his stature in his time. Yet it is not for these names and magazines that W. H. D Koerner is remembered here. Most of those magazines have disappeared. Those that have not disappeared have changed as drastically as have their readers' grandchildren. Most of the fiction writers he illustrated are remembered poorly because the life-way they limned was extirpated by internal depression and inter national involvement. The West, perhaps a West that never was by land or sea, spoke deeply then, speaks deeply still today, to a people who had and have the dirt of three centuries of free westering deep-bedded in their instinctual processes. It was as an illustrator of that westering in fiction that Koerner counted the *coups* we recite today.

His gravitation towards the prestigious, well-paying *Saturday Evening Post* coincided with Lorimer's steady

The drama and detail typical of Koerner's work is shown in two illustrations for a pair of Post serials by Stewart Edward White in 1932. Above: Vaqueros and stars for "Ranchero." Below: Pawnees and troopers for "Mountain Man."

use of Western stories by writers whose names ring yet like a shod hoof on *malpais*. Struthers Burt, George Patullo, Will Levington Comfort, and H. H. Knibbs were *Post* regulars. So were C. E. Scoggins and Hal G. Evarts, both of whom have been neglected by students of the Western mythus. Koerner illustrated them all, and he illustrated the three whose names haunt memory as do the echoes of the coyote's morning song — Emerson Hough, Stewart Edward White, and Eugene Manlove Rhodes. These three loom large in the creation of our mythus, and Koerner supplied its iconography.

His *Post* association with Hough began in 1919 in a series of articles bearing such titles as "The Long Trail of the Cow Country." It continued with "The Covered Wagon," for which Koerner supplied twenty-one illustrations, and with "North of 36," for which he did twenty-

four. When these two classics became cinema epics – Lois Wilson, Jack Holt, Ernest Torrence, and Noah Beery playing the feature roles – Koerner's costumes were the models for their celluloidal attire. When *The Covered Wagon* played the Roxy in New York, the usherettes were dressed as Koerner had clothed its heroine Mollie for the printed page.

His first recorded contact with White's work was an African serial, "The Leopard Woman," in 1916. Their association in Westerns for the *Post* covered more than four years, 1930-35, while White produced the episodes that made up his saga of "Andy Burnett," for which Koerner created ninety illustrations.

His conjoining with 'Gene Rhodes began with "Stepsons of Light" in 1920. Thereafter he did all of Rhodes's major works, including "Pasó por Aquí," which some duly certificated critics have named the finest Western story ever written. Rhodes, as much as any Western writer – and more than most – made real the ideal values of his time and place, and Koerner's value as iconographer of the image is enhanced thereby.

Martha Ostenso's "Wild Geese," one of Lorimer's most acclaimed fiction offerings, boasted fifteen Koerner illustrations. When Mary Roberts Rinehart made a foray into the West with "Lost Ecstasy," Koerner drew the assignment. Zane Grey, too, had the benefit of Koerner's imagery for his "Desert of Wheat" and "Drift Fence" and "Sunset Pass" in other magazines. A Koerner painting graced the dust wrapper more often than not when these serials appeared in book form. More of his work made whatever frontispiece and interior illustration such books enjoyed, and publishers were not averse to pointing up the Koerner illustrations in their sales promotion. His numerous covers for the *Saturday Evening Post*, for which he received $1,000 each, packed a visual wallop that is attested by readers' letters in his files.

These cover paintings are significant to any reasoned appraisal of Koerner's role as iconographer in a day when magazine illustrations, even his, generally appeared in black-and-white. These cover paintings gave popular ex-

A Koerner rendering of an unlikely western anecdote.

posure (as well as triggering newsstand purchase impulses) to Koerner's emergence as master of his own technique: an explosive use of vivid color. Howard Pyle's influence, a hazed, rubbed-gold luminosity, was clearly evident in Koerner's earlier work. He began his breakthrough into his own palette in 1922 by experimenting with what he called "broken color" while summering at Gloucester, Massachusetts, and that, together with personal observation thereafter of the actual West he was illustrating, gave his work its hallmark.

The case for Koerner's role as a great iconographer of the West may be advanced by letters from Hough and White and Rhodes that make plain their dependence upon the artist: White wrote explicitly of "the work we have been doing together." Yet there is nothing in these letters to show authorial infringement of the artist's freedom. It was Koerner's sole province to read the story for setting, scene, incident and, most importantly, characterization. It then was his creative task to supply visual impact for the prose and thereby assist materially in seducing the ungentle readers of their disbelief.

This joint task was made easier and its impact heightened by circumstances surrounding Koerner's last productive years. These were the first traumatic years of the Great Depression and Lorimer's predominantly middle-class audience comprised the group that felt itself most threatened by the raw conflict between labor and capital that symbolized their world turned upside down. It was this audience that clung most tenaciously to the vanishing values, because their need was greater: a need for a reaffirmation of the sanctity of these values, a need to bolster hope that these values would again prevail. In the Western confections that Lorimer published in these years, in the imagery that Koerner gave to them, this hope was kept alive by a gripping, nostalgic awareness of the promise that had been in the West-That-Was. Given a willing audience of millions exposed many, many times each year for many years to the work of a single artist in a particular field, it is reasonable to expect that artist to have had a significant effect in creat-

ing the popular conceptions of the period and the subjects he portrayed — on that assumption the case for Koerner as a leading image-maker of the Western mythus rests.

His last major commissions from the *Post* maintained his reputation untarnished: C. E. Scoggins' "Pampa Joe," and Nordhoff and Hall's "The Hurricane," both in 1935. Failing health kept him from his easel thereafter, and he died on August 11, 1938, at his home in Interlaken, N.J. At his death, his studio was crammed with his works — oils and crayons and charcoals and watercolors. It contained his sketchbooks and notebooks and correspondence, and it held all the properties and artifacts of the West he had collected over many summerings spent on Phil Spear's working ranch near Lodge Grass, Montana. Studio and contents were kept inviolate by his widow and known only to his immediate family and a steadily shrinking coterie of admirers until her death in 1962. This prolonged sequestration may explain why critics, collectors, and lovers of the vanished West have forgotten the work of W. H. D. Koerner.

He was a prideful man — a man of integrity, of purpose, and of disciplined skills. His economy and lucidity, his sure sense of motion in open space, his craftsmanlike use of bold color, all stand in marked contrast to the obfuscation that often passes for art today. It is for these qualities that he can be viewed and enjoyed and remembered, as well as for his earned place in creating the iconography of the last American West.

The paintings shown in "The Mythic West of W. H. D. Koerner" were taken from transparencies made by Karl Obert, APSA, ARPS. They are used here through the courtesy of Mrs. F. L. Oliver of Santa Barbara, daughter of W. H. D. Koerner and custodian of his collection of paintings, drawings, and artifacts of the West.

HISTORY *Myth* & the Western Writer

BY WALLACE STEGNER

It is not quite true, as some have complained, that the critics have ignored western writing. We learned to appraise the mythic figures of western literature from Henry Nash Smith's seminal study, *Virgin Land* (1950). There have been two full-length studies of the western film: W. K. Everson's *The Western* (1962) and K. C. Lahue's *Continued Next Week* (1964). Dozens of people have written on cowboy fiction and western folklore, and all of the major writers of western origin have had plenty of biographical and critical attention. One promising study we missed: at the time of his death, Bernard DeVoto was writing a book about western reality and western myth, but he published only one chapter of it, an essay on *The Virginian*. But now within a few months have appeared James K. Folsom's *The American Western Novel* and Robert Edson Lee's *From West to East: Studies in the Literature of the American West*, and in 1966, at Colorado State University, there was established a quarterly with the stoutly regional title of *Western American Literature*.

The Western, horse opera, has actually been studied in considerable detail, though it must be admitted that critics rarely approach it from the near, or literary side. They mount it from the right, like Indians, and ride it hard as myth, as folklore, as a part of the history of ideas, or as a demonstration of Freudian or Jungian psychology. I don't recall ever seeing a Western discussed for its original social or psychological insights, for the complexity or depth of its characters, for its poetic evocativeness, for its narrative techniques, or for its prose style. It wouldn't pay to do it, for a Western is not a unique performance but a representative one. Its characters are not individuals but archetypes or stereotypes, and its themes are less interesting for their freshness or their truth to history than for their demonstration of a set of mythic patterns.

I do not intend to get caught in the argument about whether the Western is, or can be, literature on the highest level. I only want to establish its relation to another kind of western story-telling which is not mythic but literary. This literature is western with a small *w*, and only the fact that it all takes place west of the 100th meridian permits us to put it under one rubric, or to put this class of writing beside the Western. Variety is, at least superficially, one of its marked characteristics. As a westerner, I would love to believe that there is some spirit, attitude, faith, experience, tone, something, that binds all small-*w* western stories together as manifestations of a coherent regional culture. And yet I confess I have doubts: in order to get an *unum* out of our *pluribus*, do all of us define "West" and "western" too narrowly, forgetting what does not fill our bill?

It is not exactly classified information that there are many Wests. Neither is it unknown that they have certain things in common — aridity above all else, and the special clarity of light, the colors, the flora and fauna, and the human adjustments that have resulted from aridity. Most of the Wests have been touched by the magic figure of the horseman, and so almost any of them may be a legitimate home for horse opera. And all the Wests are late, large, and new. Those are the basic resemblances. Otherwise, there are almost as many divergent as convergent lines.

Is it legitimate to speak of western literature, except in reference to the Western? Can one find a relation between a story by Willa Cather and one by Steinbeck, Mary Austin, or Walter van Tilburg Clark? One is fairly sure about such a novel as *Horseman, Pass By*, by Larry McMurtry, because it is an affectionate requiem to the old-time Texas cattleman, whatever they did to it when

they made it into the movie *Hud*. But what of McMurtry's latest, *The Last Picture Show*, a sort of small-town *Studs Lonigan*? It is laid in west Texas: is it a "western" novel? Is Bernard Malamud's *A New Life* a western novel? Its setting is Oregon State College in Corvallis. Is Nathanael West's *The Day of the Locust* a western novel? It takes place in Los Angeles. Are Eugene Burdick's *The Ninth Wave* and George Stewart's *Storm* western novels? Both are laid in the San Francisco Bay Area, which was held to be the West when Bret Harte wrote about it.

Literature is one of the things that emerge as by-products when you throw people of an advanced civilization into an unrecorded, history-less, art-less new country. Western writing is only the last stage of what occurred on every American frontier. West Virginia was once as west as west Texas; the literary development of the two should have been approximately the same. According to the organic theory that has dominated our cultural self-examination from the Connecticut Wits through Emerson and Whitman to Hamlin Garland and the local colorists, each new part of the continent should have a seedtime of a generation or two, and then reap a harvest. Once it had set its roots, it should develop some variety of that "rocky, continental quality" that Emerson thought he felt in the Mississippi Valley, and start speaking out in its own native voice.

The process took place in New England, it took place in the middle Atlantic states, it occurred like realized prophecy in the Midwest, where literary nativism spread in a series of waves from Indiana to the Dakotas. It began to happen in Gold Rush California and in the cowboy Southwest; it put out belated shoots in the Pacific Northwest and in Mormon country. But I think it cannot be said to have happened plainly all over the West.

Despite large individual differences, midwestern writers from Eggleston to Dreiser and Lewis have tended to be earthy, plain, and realistic. Southern fiction from Poe to Faulkner has had strong infusions of the gothic, the grotesque, the highly colored, the "tall," and it has had its consistent and repetitive themes: color, the lost cause, the persistence of the family fabric and tradition. But when one asks if there are comparable likenesses among western writers, one hedges. Well, probably not. And then again, perhaps yes. Or perhaps only maybe.

I believe that a number of things happened to inhibit, interrupt, and in places block the organic cultural growth the West had a right, from the experience of the rest of America, to expect. One inhibiting factor was simply the West's variety. Climate, physiographic features, resources, characteristic occupations, ethnic mixtures were so various that they began to produce a Plains tradition, a desert tradition, a lumberwoods tradition, a Californian or Mormon or Mexican border tradition, and it is at least open to question whether these have enough in common to be recognizable components of a western tradition.

Moreover, the "fiction factories" that first took hold of the most colorful western themes and characters swiftly petrified them into the large, simple formulas of myth. First the Beadles with their dime novels, then the Wild West Shows, then Street and Smith and the pulp magazines, then the movies, and now television, have found those formulas to be all but foolproof, as good now as they were a hundred years ago. As a result, they do not change; they are only reassembled from interchangeable parts. They remain predictable, serene, and timeless, fantasies of self-reliance and aggression, sexually symbolic or curiously asexual, depending on which critic you read, apparently good for another century and perhaps forever.

This one area of western writing has been so calcified that it escapes the organic imperative: it is not necessary to be homegrown in order to write it. Some of the most persuasive horse operas, as witness Jack Schaefer's *Shane*, have been written by people not native to cow country, to horse, or to gun. When *Shane* came in as a manuscript to Houghton Mifflin, I happened to be in the office, and Dorothy de Santillana asked me to read it. She said she couldn't make up her mind whether it was the best Western ever written, or a parody of a Western. I couldn't tell either, but I certainly advocated its publication.

Variety, dispersion, and constant immigration on the one hand and mythic petrifaction on the other had the effect of producing either stories with little family resemblance, or stories with altogether too much. And history intervened to break up many forming regional patterns. Those patterns develop best in rural isolation; but time and change have often been so syncopated in the West that there has been no time for a native character to form and find its voice.

Settlement in the West was not only late, it was irregular. The mining West, and to a degree the timber, the grazing, and the homestead Wests, were raided, not

Continued on page 76

TICKLING MOTHER EARTH

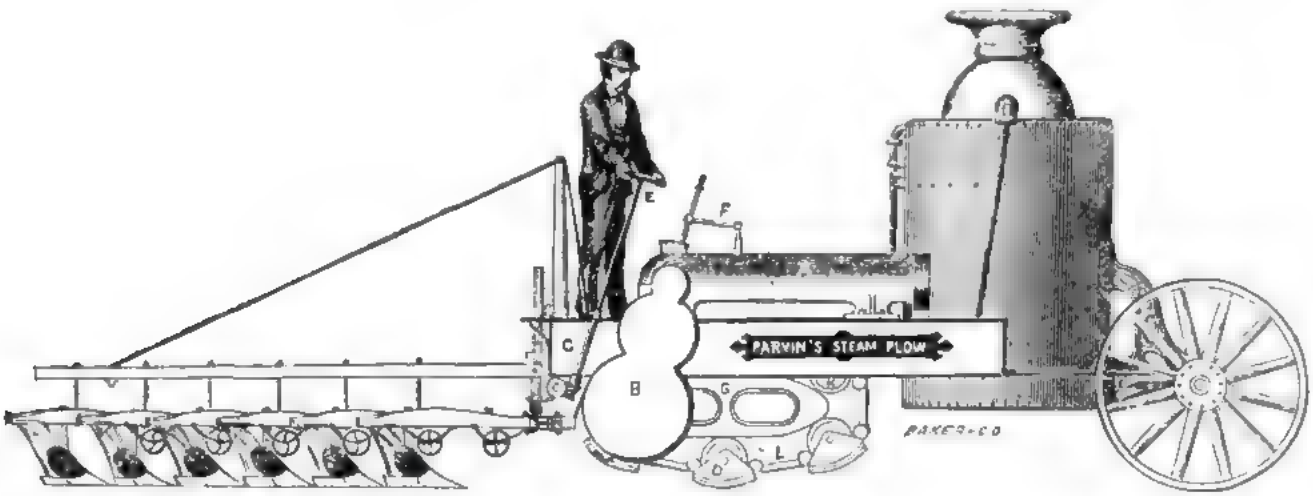
BY T. H. WATKINS

It will be remembered that "The Celebrated Steam Plow of Philander H. Standish" (*The American West*, Spring, 1966) detailed the trials and vicissitudes of California's Standish Steam Plow of 1868, a device outlandish enough to inspire an exclamation of awe from *The Mining and Scientific Press:* "Surely the bosom of old mother earth was never before tickled in such a vigorous manner."

The tickling had only begun. In the 1870's and '80's, the bonanza wheat industry of the West spawned an astounding litter of mechanical monsters designed to meet the needs of what had become *bonafide* agricultural factories. One of the most pressing needs, according to the *Mining and Scientific Press,* was for a reliable steam plow: "We seize with interest upon anything that seems to promise success in the line of steam plowing in which the power is locomotive or self-moving, because it seems to us to be a great necessity upon our wide plains or prairie lands."

On June 14, 1873, the *Press* seized upon the steam plow entry produced by the Northwestern Parvin Steam Motor Manufacturing Company of Chicago and Farmington, Illinois. While the engine of this machine was itself quite an improvement, it was not that which took the fancy of the *Press* so much as the Parvin company's proposed solution to one of the steam plow's most persistent difficulties: how enough traction could be obtained to overcome the drag of a gang plow of respectable dimensions — while keeping the machine within reasonable limits as to size and weight. "It will be seen," the newspaper reported, "that the body of the engine rests and moves upon a series of rollers attached to feet, which are automatically raised from the ground, carried forward, and deposited again in front, to be passed over regularly."

Robert C. Parvin, obviously, had come up with an antedeluvian predecessor of the modern Caterpillar tread—which would indicate that he was on the right track, as it were. Even so, while the device apparently performed well enough to justify the construction and sale of at least four sister machines, Parvin's "driving-wheel" was not revolutionary enough to eliminate all the bugs hampering the development of a

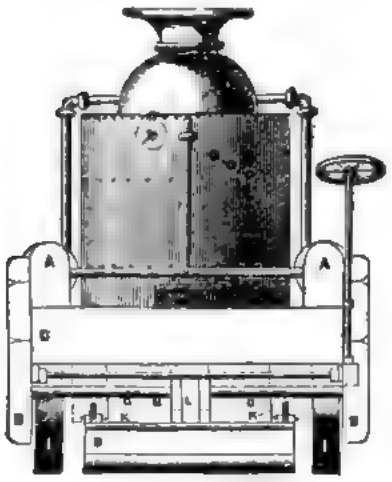


SIDE VIEW OF PARVIN'S STEAM PLOW.

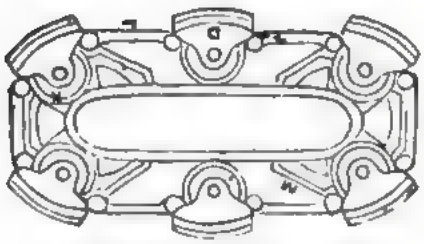
A. Casing or Cover of Engine. B. Gearing Cover. C. Water Tanks and Bed of Engine, as well as the Frame of Machine. D. The Foot or Shoe of Machine. E. Steering Apparatus. F. Reversing Lever. G. Bed or Truck of Engine.

truly practical steam plow. Witness, for example, the advice the Chicago *Prairie Farmer* gave one of its readers on October 2, 1875, more than two years after the Parvin plow was given its first trials: "We cannot advise you to buy a steam plow; nor do we know where you can obtain one that has proved to be a success. The best thing for you to do is to supply yourself with gang plows and teams. With these, plowing in the country long ago ceased to be an experiment. Not so with steam plows."

Quoted material courtesy of F. Hal Higgins, Library of Agricultural Technology, University of California at Davis



REAR VIEW.



PROPELLING FEET.

FORTHCOMING IN THE AMERICAN WEST

During the peak years of the California Gold Rush, San Francisco was probably the most photographed city in the United States, for its man in the street had money in his pocket, hope in his breast — and was eager to lay down the price of a picture to send back home to the folks in St. Jo, Utica, or wherever. An authoritative selection of the great number of daguerreotypes that resulted has been assembled and annotated by Robert A. Weinstein and Roger Olmsted.

Peace River—a farmer's frontier where nearly all the stereotypes broke down. Thomas M. Griffiths sketches the history, geography, and agriculture of the Peace River region in the high latitudes of northern Alberta, an area which contained rich cropland, yet remained largely undeveloped by His Majesty's homesteaders until the early years of the twentieth century.

In the summer of 1843, Sam Houston (left), President of Texas, authorized a military raid against the rich Mexican caravans of the Santa Fe Trail — a first step in what some hoped would be a general program of conquest, assuring Texas of her rightful place in the Fellowship of Nations. Also, she needed the money. The opéra-bouffe ***is chronicled by Stephen B. Oates in "The Hard Luck Story of the Snively Expedition."***

For a while it seemed the "magic Town" of Leadville would be the frontier's myth come true, a place where poor men could go from sourdough to chateaubriand ***by the simple exercise of wit, and industry. Not so, reports David Lavender in "This Wondrous Town; This Instant City." The myth remained a myth, as it generally did.***

ABOUT THE AUTHORS

Karl Young, whose "First Cutting" appeared in the Fall, 1966, number of *The American West,* is the grandson of Brigham Young's brother, Lorenzo Dow Young, who had five wives, three of whom bore him children. Professor Young's father talked much of his childhood days, when he spent weeks at a time with his "aunties," who did not have children of their own. "It is hard for non-Mormons to conceive that polygamist families could live in such harmony as was really common among them," Professor Young says, "but close and warm family ties still exist between the half-cousins who are descended from polygamist wives."

Thomas Emerson Ripley, Vermont-born and Yale educated, came West to Tacoma, Washington, in 1890 and remained to become president of a leading lumbering and millwork concern. Before his death in 1956, he had authored *A Vermont Boyhood* (1939), the chapter on timber in Donald C. Peattie's *Pacific Coast Ranges* (1956), and *Green Timber,* an unpublished memoir from which "Shakespeare in the Logging Camp" was taken. The story is printed here by permission of Mrs. F. Barreda Sherman.

Joseph Wood Krutch has enjoyed a varied career as drama and literary critic, teacher of journalism, former associate editor of *The Nation,* philosopher, naturalist, and author of numerous books, among which are *The Measure of Man* (National Book Award, 1954), *The Voice of the Desert* (1955), *Human Nature and the Human Condition* (1959), and *Grand Canyon: Today and All Its Yesterdays* (1958). In 1963 he was narrator-performer for NBC's "The Voice of the Desert."

Robert C. Euler was born in New York but reared in Colorado and New Mexico. For the past 15 years, while successively Curator of Anthropology at the Museum of Northern Arizona, a professor of anthropology at Northern Arizona University and the University of Utah, and Chairman of the Center for Anthropological Studies at Arizona's Prescott College, he has done archaeological and ethnohistorical research in and around Grand Canyon as well as elsewhere in the Southwest and Great Basin

Francois Leydet, a river runner of experience, has written two of the Sierra Club's "Exhibit Format" books: *Time and the River Flowing* (1964) and *The Last Redwoods* (1963); has edited their *Tomorrow's Wilderness* (1963); and is currently at work on *How Can You Sing?* a study of predator control in the West.

Daniel B. Luten, Lecturer in Geography at the Berkeley campus of the University of California, has a particular interest in the relationship between natural resources and population increase. He has published articles on this subject in *The Nation,* the *Sierra Club Bulletin,* and *Landscape,* and was one of the contributors to Francois Leydet's *Time and the River Flowing* (1964).

W. H. Hutchinson, a contributing editor of *The American West,* is literary executor of the works of Eugene Manlove Rhodes and the proprietor of "One Man's West," a column on western history and literature appearing in the San Francisco *Chronicle.* His other works on the subject of western literature include *A Bar-Cross Man* (a biography of Rhodes, 1956), *The Rhodes Reader* (1957), and "Virgins, Villains, and Varmints" (Huntington Library *Quarterly,* August, 1953).

Wallace Stegner is the author of many novels, including *The Big Rock Candy Mountain* (1943). His newest novel, entitled *All the Little Live Things,* will be issued in August by the Viking Press.

Brief Sanctuary *continued from page 11*

of the street, near Skousen's mill, where they found that the soldiers had dismounted and were making cook fires. The soldiers were just carrying off the last items from a load of food supplies owned by three Chinese merchants, and as they drew near the campground, Farnsworth and Bentley could hear the shots that disposed of the Chinese. Sálazar had executed the merchants because some Chinese had recently denied money to Villa. By revolutionary standards they did not deserve to live.

"Ah, President Bentley, I'm glad you have come," said Sálazar. "I have an order here to have all you people from the colonies join our army and help us fight. You must not only fight Obregón, but also help us whip the United States. They are going against us, and we want you to help us combat all our enemies. I'll equip you with all you need, but if you refuse, I am to take you out and shoot you. So, Mr. Bentley, I would like you to go and call all the men in this town, both Americans and Mexicans, to come here for a meeting. I shall expect them to enlist to help us in our great cause."

Bentley bowed to Sálazar, then turned to Farnsworth. "Will you drive me around to call the men together?" he asked. They drove off in the little cart behind the crippled old horse. Some of the men in town refused to go down to the mill, saying they would take their chances with an old musket behind an adobe wall before they would be conscripted. But most of them listened to Brother Eskelsen, who asked what the Stake President's advice was. When Farnsworth answered that President Bentley had asked them to come, Eskelsen said, "That's good enough for me. I'll go." The rest followed him.

Sálazar waved a piece of paper at the assembled group. It was, he said, authorization for the demand he was making. He spoke with vigor and determination. When he had finished, Bentley said, "I have some things I would like to say." He was a small man, and as he stood there addressing Sálazar, who towered above him, he looked especially inadequate. But he looked the big fellow in the eye and spoke quitely.

"General Salazar, we are not here in this country for the purpose of entering into any fights or taking up arms against anybody. We came here to find peace, not war. We came in search of a better life. We wanted to build better houses, raise better crops, send our children to better schools, and improve the living of daily life in every way that we could. And we have succeeded to some extent in establishing good conditions

Colonia Juárez today

here. Never have we looked for anything but good from our Mexican neighbors. We love them, and we have tried to share with them our knowledge so as to raise standards of living for them, too. We are not only willing but eager to help the Mexicans in any peaceful way we can. That is our mission here. But that is all you can expect us to do. We can't take up arms or fight against anybody. We don't intend to. If you have orders to execute us, then it is up to you to decide what to do. We will not take up arms against anyone."

It was a frightening moment, but the smaller man's words apparently moved the general as genuinely as they had the colonists. "*Yo se cambió mi corazón*," Sálazar said at last. "I've had a change of heart." He held out his hand. Bentley took it, and one more disaster was avoided.

There were still trying periods ahead. The heyday of prosperity in the Mexican colonies was over, but quite a number of those who came back and stuck out the years of unrest and turbulence made small fortunes shipping apples to Mexico City in refrigerated trucks. And they had the satisfaction of seeing several of the boys from their Juárez Stake Academy make names for themselves in the academic and political worlds. Two of the most distinguished are O. Meredith Wilson, recent president of the University of Minnesota, now with the Ford Foundation, and Henry Eyring, an internationally known chemist. Another, Governor George Romney of Michigan, is often mentioned as a possible candidate for the presidency of the United States. Young men from the colonies come up to Utah to finish their education and to find wives, but many of them still look upon Mexico as a land of opportunity — no longer just a haven for men with more than one wife, but a country in whose development enterprising men can share.

A good place to begin reading on early Mormon history in Utah is the *Journal of Discourses* (Liverpool, 1886), in whose twenty-six volumes speeches by Church leaders on a great number of topics concerning Mormons are reported, including polygamy (14:243-245; 25:349-50, 25:229; 11:223) and the colonization project trip (26:205).

The background history of the Mexican Revolution as it affected the colonies is ably presented in Charles C. Cumberland's *The Mexican Revolution: Genesis under Madero* (Austin, 1952) and *Francisco I. Madero, Apostle of Mexican Democracy* (New York, 1955) by Stanley R. Ross. Accounts of early expeditions into Mexico may be found in Andrew Jenson's *Church Chronology* (Salt Lake City, 1886), John R. Young's *Memoirs* (Salt Lake City, 1920), and in J. H. Martineau's "History of the Mormon Colonies in Mexico," an unpublished manuscript in the library of Brigham Young University. Martineau, a colonist in Colonia Juárez, made extensive efforts to record the history of all the colonies, interviewing informants and preserving many first-hand accounts as well as the commonly repeated ones of his day. His collection included eighteen folders, but Martineau died before the compilation could be collated and edited.

The chronological account of the settlement of the colonists in Chihuahua, and their later exodus, is found chiefly in the Martineau manuscript; the private papers of Mrs. Nelle S. Hatch, Colonia Juárez, Chihuahua, Mexico, as well as her excellent study, *Colonia Juárez: an Intimate Account of a Mormon Village* (Salt Lake City, 1954), and in taped interviews I made in 1962-63 with David A. Brown, Lester B. Farnsworth, Nelle S. Hatch, Heaton Lunt, Lemuel H. Spilsbury, James E. Whetten, and many others. Professor Asael C. Lambert provided material on the conflicts between Mormons and non-Mormons over the question of "Mormon empire," and Professor Gustive O. Larson's forthcoming book, *Crusade in Utah*, together with his personal advice, guided me through the political struggles over polygamy.

The Canyon Dwellers *continued from page 27*

dreds of sites in its myriad recesses and on both rims. The overwhelming majority of prehistoric ruins in Grand Canyon consists of small, surface masonry pueblos with associated storage rooms, mescal pits, and occasional kivas. Frequently these were built on open, relatively flat terraces. Many Indians did take advantage of the towering cliffs and built against them at the tops of steep talus slopes, but true cliff dwellings are not often encountered.

The ruins are now visible as low remnants of masonry walls that mark room outlines. The ground around them usually is littered with broken pottery and stone tools, such as arrow points, scrapers, and milling stones. Storage rooms and the talus-top pueblos are usually found in a better state of preservation, and in a few instances the original wooden roofs are still intact. At one site in Shinumo Canyon, for example, the masonry walls of a room are spanned by cottonwood timbers, crossed at right angles with smaller poles, slabs of rock, and finally a layer of earth, as is typical of Pueblo architecture elsewhere. The storerooms, placed in protected niches or overhangs, ordinarily are well preserved, but except for an occasional corncob, their contents have long since been consumed by rodents. Mescal pits, where the roots and tender young shoots of the Agave plant were roasted, are marked by large circular depressions, some with diameters of 20 to 25 feet, ringed with masses of small, charred rocks.

Today, visitors viewing Grand Canyon only from the

comfortable vantage of the rim may wonder how Indians could have survived down in the Canyon and, indeed, why they entered it in the first place. The answers to these questions can be found in the cultural adaptations the Pueblos made to their natural environment. One must remember that these Indians had a well-balanced economy based upon hunting, gathering of many wild edible plants, and agriculture. While deer hunting undoubtedly was excellent on both north and south rims, such other game animals as mountain sheep and rabbits were to be found below the rims. Wild food plants grew in abundance on the rims, but only those ecologically adjusted to the high plateau elevations (7,000 to 8,000 feet). In the Canyon below, many other staples could be gathered: the tasty fruits of certain varieties of cactus, the edible beans of the mesquite, the catclaw, and the Agave. Furthermore, successful farming of beans, squash, corn, and cotton depends upon a rather long, frost-free growing season and sufficient water. Both were obtainable at Canyon elevations below 3,000 feet. While both rims are relatively devoid of dependable water sources, the recesses of the Canyon contain many springs and, particularly in side canyons near the north rim, permanently flowing streams. While there undoubtedly have been some climatic changes in the several centuries since the Pueblo occupation was at its height, particularly changes in rainfall pattern, it is worthwhile to note that in some side canyons where there are permanent streams or springs today, there are ruins; where there is no water now, prehistoric sites are lacking.

Environmentally, then, the Canyon provided excellent resources to sustain Pueblo life, though in all probability occupation was in large part seasonal. While archaeologists will not be more certain until excavations are undertaken at selected ruins in the inner canyons, the lack of an extensive fuel supply for winter warmth would seem to suggest habitation of the lower reaches in the summer growing season and of the well-wooded plateaus back from the rims, particularly the south rim, in the winter. Indeed, this was the pattern of the Havasupai until they were restricted to their present village in the Canyon bottom around 1895.

But this is not to say that every spring saw mass migrations of Indians into the Canyon. Hundreds of ruins on both north and south rims indicate that many families remained on the plateau and farmed there during the summer months.

One of the most significant of the twelfth-century Pueblo agricultural communities was on the plateau near the Canyon's rim. (Its precise location is withheld to prevent vandalism.) Here, along a relatively shallow drainage for a distance of some two and one-half miles, archaeologists recorded 44 small masonry pueblo ruins and, in the drainage itself, 77 agricultural check dams. Here, for perhaps a hundred years, a number of family groups, possibly interrelated, planted crops, hunted, and gathered wild plants in the Canyon below. On the Canyon walls nearby are remnants of precipitous trails, marked in one instance by a small masonry storeroom tucked into a recess in the cliff some two thousand feet below the rim; below that, only a few hundred feet above the Colorado River, is a prehistoric wooden bridge that spanned a crevice on a narrow ledge. From this trail it was possible to cross the river and climb out the other side.

Throughout many tributary canyons, especially in the eastern portions of Grand Canyon, are similar Pueblo masonry ruins in association with low check dams. At one site there is a long stone wall that was apparently built to divert sheet drainage from the hills above to agricultural fields. There is abundant evidence that these Indians practiced erosional control and other conservation measures.

Studies have been made that indicate a strong correlation between the locations of prehistoric sites and routes of access into the Canyon where its sheer walls are broken down. In one such area there exists additional evidence that the Indians moved from plateau to Canyon and from rim to rim with relative ease. On a ledge, seemingly inaccessible from ruins in the Canyon below or from the rim above, is a small limestone cave that contained corncobs and two pottery vessels. Presumably, this was a way station along a prehistoric trail to the rim, where travelers could find a cache of food and water. The ledge marks the only place within many miles where it is possible to climb out of the Canyon.

At another locale, in the eastern portion of the Canyon below Lipan Point, a one-room masonry structure with what appears to be loopholes in its walls may have been some type of look-out on a cross-Canyon trail. The structure commands an excellent view up the river and across to a large concentration of Pueblo ruins on the north side. And from this site it is possible to climb to the south rim near Desert View.

It should be noted that along the south rim from Desert View west to the Great Thumb peninsula, several

One of the willow-twig figurines found in Grand Canyon. Sometimes dating back more than 4,000 years, these stylized figures apparently formed part of the ritual structure of the Canyon's earliest inhabitants.

A cave in the sheer wall of Marble Canyon—occupied by man 2,000 years before the birth of Christ. The split-willow figurine shown above was found in this cave.

masonry structures stand on small, and sometimes quite isolated, sections of cliff that project out from the main rim. Often massive limestone walls rim the edges of these "islands." To many observers, these Pueblo buildings seem to have been fort-like in character, but absolutely no evidence of actual hostility has ever been discovered in Grand Canyon. In fact, these south rim "forts" would have been virtually indefensible against attack from the "mainland," for they are *cul-de-sacs*, cut off from all food and water save that which might have been stockpiled before a siege.

Grand Canyon and its immediate environs to the north and south were almost completely abandoned by 1150 or 1200 A.D., not only by the Pueblos but by the Cohonina population on the south rim. Why did they leave? Present evidence would seem to point to climatic changes rather than the presence of hostile peoples. It is true that at about 1150 A.D. the Cerbat Indians made their appearance on the plateaus along the south rim and the forerunners of the Southern Paiute penetrated the high, forested lands near the north rim, but there is nothing to indicate that either the Pai (as the combined Walapai and Havasupai once termed themselves) or the Southern Paiute forced the Pueblo abandonment.

In adjacent regions of the northern Southwest, however, studies of fossil pollen rains and annual tree-ring growth point to a shift from winter to summer precipitation at about this time. Since successful maize agriculture depends in large part upon soil storage of water from winter snows and rains, such a change could well have made farming impossible, or extremely marginal except near a few choice springs or streams.

The mystery of the exodus from the Canyon indicates a need for more detailed archaeological excavation (only two ruins on the south rim and none in the Canyon or on the north rim have been dug scientifically) and for more paleo-climatological studies based upon detailed examination of soil stratigraphy, pollen, and tree-ring growth.

Soon after 1150 A.D., the Pai spread over the southern plateau and penetrated much of the western and central part of the Canyon. By 1300, they had reached their maximum range and occupied all of the south portion of Grand Canyon and its plateau east to the Little Colorado River. Throughout this region, they hunted, gathered, and carried on some farming near permanent springs and streams. The habitation sites discovered within the Canyon consist of rockshelters, on the floors

of which lie trash and cultural debris, including reddish-brown potsherds, flat-slab milling stones, and small, triangular side-notched arrow points, all differing from those of the Cohonina or the Pueblos.

On the north rim uplands and in their tributary canyons, the Southern Paiute maintained a similar existence after the twelfth century. Their fingernail-incised brown pottery, milling stones, and arrow points were somewhat different from those of the Pai, but they also occupied rockshelters and roasted Agave in stone-ringed pits. Now and then they camped in abandoned Pueblo ruins, for their pottery sometimes has been found mixed with that of the Pueblos around the masonry structures.

Both the Pai and the Paiute occupations were stable and long-lived. From about 1150 until the latter part of the nineteenth century, they continued to use the natural resources of Grand Canyon.

There is some evidence that both groups maintained amicable trade relations with the Pueblos in the present Hopi country. By 1300, the Pueblos had ceased to make black-on-white and polychrome pottery, and had developed a yellow ware, exquisitely decorated with designs in brownish-black paint, similar to the Hopi ceramics of today. Fragments of this black-on-yellow pottery are found on many Havasupai, Walapai, and Southern Paiute ruins in Grand Canyon, probably the remains of vessels traded from the Hopi Pueblos in exchange for deer skins, red paint, and mescal.

Occasionally, too, from 1300 until relatively recently, the Hopi periodically returned to Grand Canyon to collect salt from a natural deposit near the confluence of the Little Colorado and Colorado rivers. They approached these salt mines either by way of the Little Colorado gorge or down what is now known as the Tanner Trail below Desert View. On both these routes are former camp sites of the Hopi, marked by the bright yellow potsherds.

The discovery, or rather rediscovery, of one such Hopi site near the mouth of the Little Colorado River involved some elementary archaeological detective work. In August of 1869, when Major Powell camped there on his first exploration down the Colorado, his men reported finding traces of an ancient Indian habitation. Eighty years later, when professional archaeologists first surveyed the river banks through Grand Canyon, they could not find this ruin. The only sign of human habitation by the blue lagoon at the mouth of the Little Colorado was a one-room stone cabin built by a prospector named Beamer about 1889. After two later visits, archaeologists noted some erosion in the bank at the front of the cabin. Protruding from this bank were fragments of Beamer's trash, broken bottles, and rusted tins. Beneath those, were aboriginal potsherds, first the post-1300 Hopi yellow wares and then, lower down, the earlier Pueblo black-on-white and gray types. Between the time of Major Powell's observations and that of modern archaeologists, Beamer apparently had modernized a prehistoric Pueblo structure!

Beamer wasn't the only Anglo-American to explore Grand Canyon in those decades after Major Powell's trips. Mormons investigated the north rim and visited the Southern Paiute. On the south side, after the United States had forcibly established peaceful relations with the Pai and placed them on separate reservations in the early 1880's, other Anglo prospectors tramped over former Indian trails and discovered copper, asbestos, lead, and other mineral deposits. They dug shafts, transported heavy mining equipment on the backs of mules, and even constructed cable crossings of the river. Intrepid boatmen left the wreckage of their craft and the graves of some of their men by the river. Early tourist accommodations, forerunners of modern hotels and motels, were built on the south rim. Today, even these structures are in ruins — if not obliterated. History and prehistory are absorbed by the contemporary scene, and hundreds of thousands of tourists who come to gaze in awe at the Canyon are unaware that this great natural wonder has formed the stage and the backdrop for four thousand years of human endeavor.

A fundamental knowledge of southwestern archeology may be gained from H. M. Wormington's *Prehistoric Indians of the Southwest* (The Colorado Museum of Natural History, Denver, 1947). While much more has been written of Grand Canyon's scenic beauty and geology than its prehistory, background and comparative data on the subject can be found in several sources.

The early split-twig figurine complex has been summarized by Douglas Schwartz, Arthur Lange, and Raymond de Saussure in "Split Twig Figurines in the Grand Canyon" (*American Antiquity*, XXIII-3, 1958), and in an article by Robert C. Euler, "Willow Figurines from Arizona" (Natural History, LXXV-3, 1966). Its possible Pinto culture relationships are set forth in Charles McNutt and Robert C. Euler, "The Red Butte Lithic Sites Near Grand Canyon, Arizona" (*American Antiquity*, XXXI-3, 1966). The Desert Culture is best explained by Jesse D. Jennings in *Danger Cave* (Society for American Archaeology, Memoir 14, Salt Lake City, 1957).

Archaeological data concerning the Cohonina can be found in

John McGregor's *The Cohonina Culture of Northwestern Arizona* (University of Illinois Press, Urbana, 1951), and Joe Ben and Pat Wheat's "A Pueblo I Site of Grand Canyon" (*American Antiquity*, XIX-4, 1954)

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On the subject of Pueblo culture in the Grand Canyon, the following studies (listed in chronological order) are of primary importance: Neil Judd's *Archeological Observations North of the Rio Colorado* (Bureau of American Ethnology, Washington, 1926), Emil W. Haury's *Kivas of the Tusayan Ruin, Grand Canyon* (Globe, Arizona, 1932), Edward Hall's *Archeological Survey of the Walhalla Glades* (Flagstaff, Arizona, 1942), C. S. Wilder's "Archeological Survey of the Great Thumb Area, Grand Canyon National Park" (*Plateau*, XVII-2, 1944), Walter W. Taylor's *Brief Survey Through the Grand Canyon of the Colorado River* (Flagstaff, 1958), Robert C. Euler and Walter W. Taylor's "Additional Archeological Data from Upper Grand Canyon: Nankoweap to Unkar Revisited" (*Plateau*, XXXIX-1, 1966), and finally, the following articles by Douglas Schwartz: "Climate Change and Culture History in the Grand Canyon Region" (*American Antiquity*, XXII-4, 1957), "Archeological Investigations in the Shinumo Area of Grand Canyon, Arizona" (*Plateau*, XXXII-3, 1960), "An Archeological Survey of Nankoweap Canyon, Grand Canyon National Park" (*American Antiquity*, XXVIII-3, 1963), "Nankoweap to Unkar: an Archeological Survey of the Upper Grand Canyon" (*American Antiquity*, XXX-3, 1965), and "A Historical Analysis and Synthesis of Grand Canyon Archeology" (*American Antiquity*, XXXI-4, 1966)

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River Run *continued from page 46*

row, too narrow in places to row, so we had to push ourselves by hand along the walls. After a hundred and fifty feet or so, we broke into a long, deep, sunlit pool. The pool was set in a bowl of pink stone and fed at its far end by the creek, which cascaded over rocks. For four hours we stayed at this pool, swimming and diving, retreating from the heat of the sun. Then it was time to go. We threaded the magic passage again, and I took a last good look at it before setting myself for the rapid: if Bridge Canyon Dam were built, this gem of Grand Canyon National Park would be eighty feet under water.

For not even the Park and the Monument themselves were to remain inviolate. The dam would back water through the whole forty-mile length of Grand Canyon National Monument and thirteen miles into, or adjacent to, Grand Canyon National Park, in defiance of the letter and spirit of the National Parks Act of 1916, which states: "The fundamental purpose of the . . . parks . . . is to conserve the scenery and the natural and historic objects and the wildlife therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." But since World War II, advocates of big dams have sought to breach the defenses of the parks — and may yet succeed.

The twenty-five miles of river from Kanab Creek to Toroweap impressed me as the most beautiful of the trip. Along here the walls had the warm color of the Marble Gorge near Vasey's Paradise, with an even more soaring quality. Below Havasu Creek, there was an aisle in which the foot of the left wall had been carved by the river into a series of fantastic figures that mimicked the mysterious Easter Island statues or, seen in profile, reliefs on Mayan temples. There was not only Havasu Creek but Fern Glen to visit, its graceful upper amphitheatre tapestried with ferns and orchids. As we neared our chosen camp at Mile 177, we sighted a golden eagle far overhead, about two-thirds of the way up the three-thousand-foot cliff on our right. We watched for a full minute as it circled effortlessly upward, around and around, with never a beat of its wings, until it suddenly was gone, having soared over the rim at Toroweap Overlook.

Early the next morning we reached Lava Falls, the most difficult rapid on the river, one seldom challenged

by oar-powered wooden boats — they are almost always lined or portaged. But we decided to run it, and it rewarded me with probably the wildest thirty seconds of my life: an awesome initial drop at the end of the tongue; the fight to retain, or regain, control; the calculated near-miss of an enormous boulder over which the current plunged like breaking surf; the frantic struggle to pull to the left and avoid a wave that measured more from trough to crest than the sixteen-foot length of my boat; hitting the hole head-on; the second or so of impotence as the boat was stopped cold and the great wave crashed onto us, springing both rear hatches open; then the breakthrough into sunshine, still upright; the realization that we had made it, that we had won, that we had overcome Lava Falls; the wild feeling of triumph at such a culmination of the trip.

We were still elated that afternoon when, drifting silently along on a stretch of quiet water, preceded by a pair of great blue herons, we suddenly sighted a band of seventeen bighorn sheep grazing on the left shore. These were beautiful big animals, no more like a domestic sheep than a wolf is like a pug, with short, deer-colored coats and, on the males, massive, spiral-curving horns.

We got to within a hundred feet of them before they took alarm. Then they were off, quickly but without panic, proceeding single-file up a steep draw, springing from ledge to ledge with prodigious vertical bounds. How would these fine animals fare, I wondered, if a reservoir were to flood out their prime streamside feeding grounds? What would a man-made lake do to the delicate ecology of this exacting environment, to all the animal species that over the millennia have adapted themselves to the special conditions of life on the Canyon bottom? It would be mass eviction for some species — with whatever that might mean to their eventual survival. For others, it would be mass murder.

"That's too bad," the dammers and their allies would say, "but human needs come first." But what needs? Of what humans? — as Joseph Wood Krutch once asked. In the words of the Bureau of Reclamation itself, the dams are needed as "cash registers" to finance the delivery of water from Lake Havasu, hundreds of miles downstream, to central Arizona. Does a transitory financial *gimmick* qualify as a vital human need? There are alternative ways to finance the delivery to Arizona of her rightful share of the river's water; there is only one Grand Canyon.

But there is indeed a compelling human need for some areas of superlative, natural wilderness beauty — undammed, unlogged, unmined, undeveloped — as reminders of the priceless natural heritage which we have largely squandered as scientific laboratories for the study of nature at work, as soul-healing refuges from the pressures of an overmechanized and overpopulated world.

After we had our last glimpse of the bighorns, we ran on between Canyon walls lined for miles with black columnar basalt. These columns continually changed their angle as we rowed by, here vertical, there slanted, here twisted and whorled, there taking the shape of a perfect seashell. These extraordinary formations, which in their extent dwarfed the basalt columns at Devil's Postpile National Monument, would be submerged by a reservoir. Submerged also, of course, would be the lovely, sandy beaches where we made our last three camps — at Whitmore Wash, Spring Canyon, and Travertine Falls — beaches fringed with feathery tamarisk at water's edge, grown with delicate pink desert primrose and golden desert plume, apricot mallow and huge white blossoms of Jimson weed, shaded here and there by mesquite and catclaw. Beaches at dusk, with our driftwood campfire lit, the bats flitting overhead, the Canyon's upper cliffs lit by the setting sun, the soft, warm air, and the bracing effect of sweet, hot tea.

We met our tow below Gneiss Canyon Rapid, a little before noon on the nineteenth day of the trip. All afternoon we sped along, through the last forty-five miles of Grand Canyon, its walls marked in this stretch by the high-water line of Lake Mead, like a ring of dirt in a bathtub. Shouting to hear each other above the din of the motors, we glided past the vast silt fields around Pierce Ferry, deposited when the lake was high, through miles of muddy water and tangled driftwood rafts at the head of Lake Mead, and finally over the reservoir's rough, clear water to the Temple Bar marina. Now we were in the realm of fishermen and water skiers, and the wakes of their powerboats furrowed the blue surface. They bustled energetically about the docks and launching ramps, and clattered cheerfully into the little restaurant and bar. They were a boisterous and happy lot, far from their cities and their jobs and their cares. And yet. . .

. . . Above the growl of their Evinrudes, had they ever heard the tumbling notes of the canyon wren's song?

Use of a River *continued from page 53*

groundwater in the confidence that deficits would be made up before the wells ran dry. The first step in this stage was to be the construction of Echo Park Dam near the junction of the Green and Yampa Rivers. The resulting reservoir would back water up into Dinosaur National Monument. The next step was to be Glen Canyon Dam, which would create a reservoir equal to Lake Mead and would, if it ever filled, back water up into Rainbow Bridge National Monument. The third was to be two dams in the Grand Canyon, one above the National Park, the other below it but backing water up through the length of Grand Canyon National Monument and well into the Park. With the interference of World War II, it was not until 1955 that plans were ready.

But at this time another element in American culture intervened. Up until 1955, concern had only been for the river's usefulness. Now the landscape of the basin was beginning to arouse an American concern for beauty and wildness that goes back two centuries. It was first tuned to Atlantic shores, then to forested hills, then to snow peaks. At last we began to see beauty in painted deserts and canyonlands. Here again the issue came up: are some things more to be admired than used?

It had come up many times before. It had arisen in an empty land when objections to wilderness reservations were minor and easily overcome — Yellowstone and Yosemite. It had come up later when beauty and usefulness met head-on — and usefulness had won — Hetch Hetchy. At Echo Park, beauty won, perhaps in large measure because the case for usefulness was weak. In Glen Canyon, beauty lost, in perhaps the most grievous loss of all, simply because no one knew what was there. Now the battle for Grand Canyon is in its third year. It is not yet lost to beauty, but it is far from being won.

Over the century since Yellowstone was dedicated to beauty, the land that was empty has filled. Simultaneously the contention over any proposal for land use affecting the general welfare has grown from less than a whisper to at least a babble, sometimes a roar. If the problem of an empty land was to encourage development, the problem of a full land is to know what is the part of wisdom in resolving conflicts between utility and beauty.

In the controversy over the future of the Grand Canyon, neither side has an intellectual fortress of security. Agreement has not been reached on either the usefulness of the dams or the admirability of the canyons. The reclaimers, who want dams in Marble Gorge, upstream from the National Park, and at the head of Lake Mead (Bridge Canyon, renamed Hualapai Dam), claim the dams are needed to finance useful facilities for moving water into Arizona and to build up a fund for such future developments as moving water from the Columbia Basin into the Colorado.

Conservationists say that water can reach Phoenix without impairing the Canyon. If a "cash register" to subsidize its transport is needed, other means can be found. Hoover Dam, ultimately, will generate enough power to pay for Arizona's water system. Nuclear power plants or coal-fired steam plants could be the cash registers, too, although few dare to challenge the tradition that reserves steam power (except in the Southeast) to privately owned utilities. Arizonans themselves could pay for their water system. The cost, less than a nickel a day each, is minor compared to average American spending for tobacco or alcohol. How valuable is water? Los Angeles taxpayers pay for a comparable aqueduct, and it is doubtful if one out of ten ever *knows* he is paying for it.

Dam proponents counter that the water is for farmers, and farmers cannot afford to pay city water prices.

Erosional cliff lines from Grand Canyon north to central Utah.

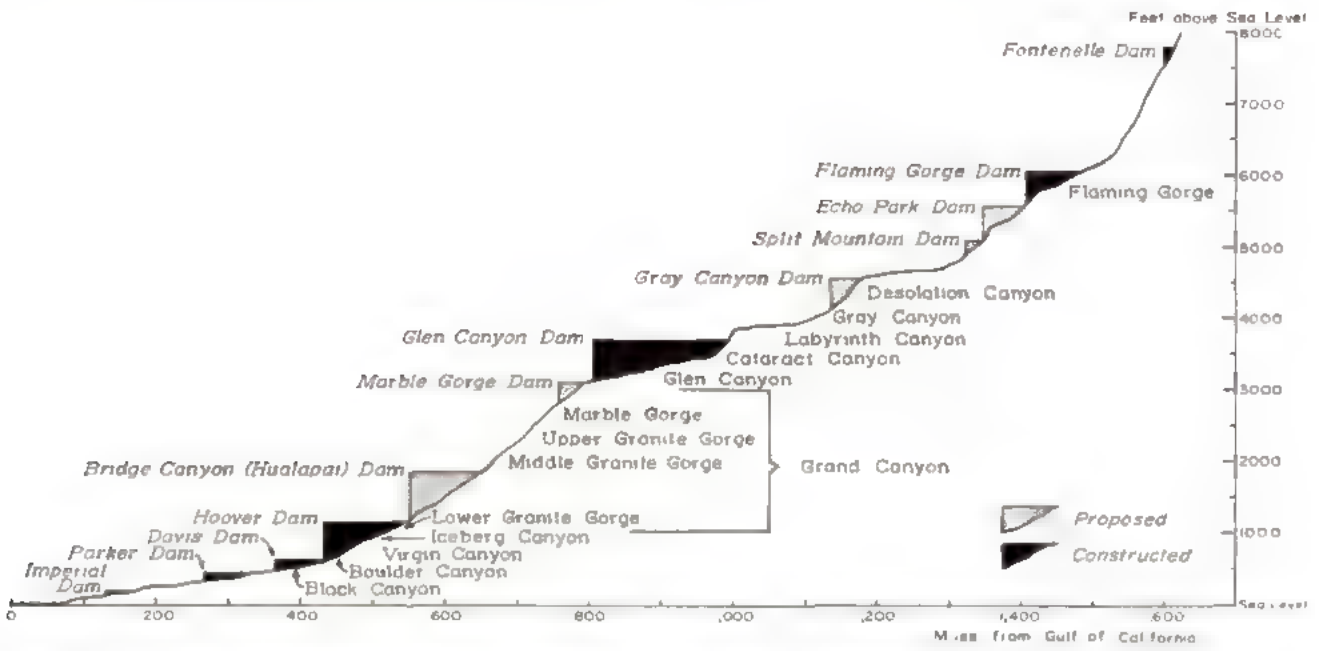
And it *is* a lot of money for the farmers to pay, for there are only 8,000 of them in all of Arizona. They have an average of only 125 acres of cropland apiece — a million acres all told, one tenth the cropland of the small state of Indiana. A million acres could be contained in a 40-mile square. And the water supply currently proposed, 1.2 million acre-feet, is enough for only a quarter of that area — a strip 10 by 40 miles. It has been argued that Arizona cropland is particularly important because it grows "protective" foods essential to the American diet. But a third of it is in cotton, another third in alfalfa, and only the remaining third in vegetables and fruit.

The economic issue is in fact something quite different. Reclamationists wish to create a large "development fund" that will continually grow and support ever-expanding water management schemes. Hydropower dams do this well. They don't wear out, and when they have paid off their own costs, they can support additional projects far into the future. If a great battery of them were available, perhaps we could expand water projects *ad infinitum*. A fly in this ointment is that the best power sites were the first to be developed. Hoover Dam was built when costs were low and electric power high. Today, dams cost more and power is cheaper. While reclamationists propose to sell power from the new dams largely at peak-demand hours and at premium prices, questions have been raised whether such prices will be durable.

The arguments on usefulness and economic attractiveness run on and on, in intricate detail. Congressional hearings on these matters suggest that few people have mastered the intricacies, that probably no congressmen have had the time to do so, and that decisions will not be based on the logic of economics.

On the other side, on the question of beauty, the matter is no simpler. Conservationists have argued that National Parks must not be invaded by incompatible uses and that a reservoir is an incompatible use, that reservoirs will destroy unmatched natural landscapes, and that reservoirs will make impossible the experience of following the wild Colorado down its length. In rebuttal, the reclamationists have said that only a few privileged individuals have traversed the length of the canyons by boat. In contrast, they say, the reservoirs will let millions see the canyon safely by motorboat. Furthermore, they will provide trout fishing.

We are faced here with a problem of quality in recreation. If it can be argued that *any* quality in recreation is important, can it then be argued that only a certain, arbitrary amount is needed? If the word "quality" be



Profile of the Colorado River System, showing existing and proposed dams and reservoirs.

even mentioned, can we escape the fact of a hierarchy of quality? All of the force of argument for outdoor recreation is predicated on its quality. If we can argue a preference for the most prevalent of all outdoor recreation, "going for a drive," over watching television, then we must recognize that artificial trout fishing in an artificial reservoir may have an even higher quality. But we must also realize that to raft down a wild river, to immerse one's self in an isolated land of wild, magnificent scenery, to be isolated from outboard motors and radios, the symbols of security in a mechanized society — these may have yet a higher quality.

Lake Mead may well have recreational values for water-oriented activities. Certainly, a great deal of money is spent on equipment for water sports. But I have looked out over Lake Mead on a hot summer weekend afternoon only to see the hundreds of boats all moored and the surface of the lake vacant. Because Lake Mead exists, the argument for Lake Powell's water-based recreation was weak. Because they *both* exist, the arguments that new reservoirs between them will add still more recreational benefits are simply without force.

Such controversy is not about to end. So long as Americans continue to value both the useful and the beautiful qualities of the landscape, so long as they cherish both fields and wilderness, so long as they are beset by both nostalgia and wanderlust, for so long will the problems of conflicting demands arise.

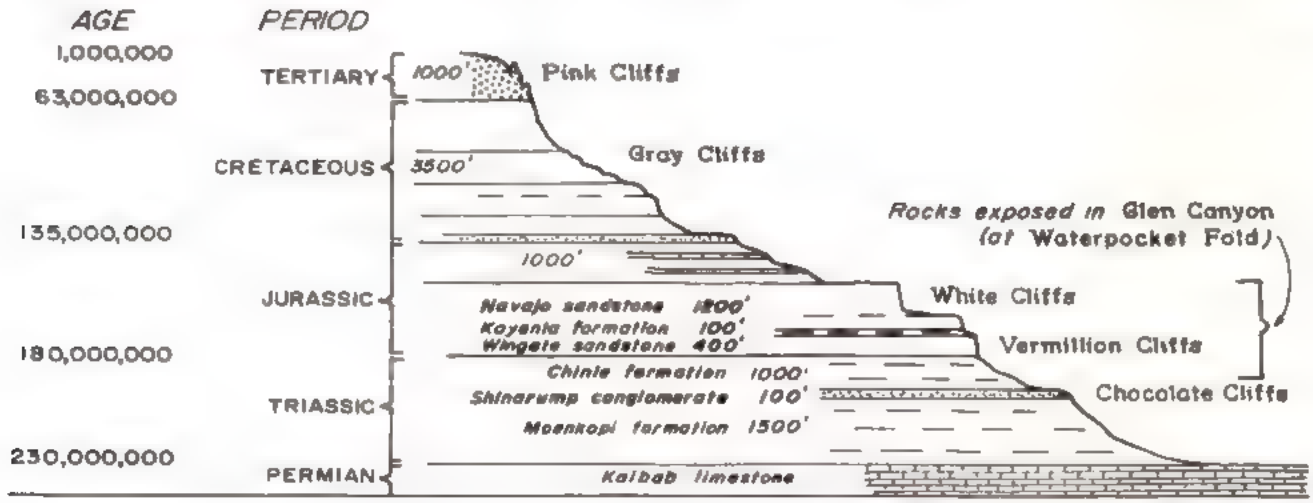
In such dilemmas, we usually speak of compromise. The compromises are never true ones, for beauty does all the compromising. Splitting the difference between utility and beauty again and again ultimately will leave nature next to nothing; half of a half of a half of a half is a sixteenth.

Suppose someone were to counter a suggestion to compromise on the Colorado dams by saying, "Certainly. Two dams block the river today, Hoover and Glen Canyon. You may keep Hoover, if you will remove Glen Canyon Dam and let Glen Canyon begin its return to the world of beauty."

"Ridiculous!" is the only possible reaction. And for so long as such a statement is ridiculous, the cause of the American landscape is a losing battle, to be fought from barricade to barricade, but always backward.

When will the tide turn?

The principal sources used in the writing of this article include *Ten Rivers in America's Future*, by the President's Water Resources Policy Commission (Washington, 1950); "Rivers," by Luna B. Leopold (*American Scientist*, December, 1962); William D. Thornbury's *Regional Geomorphology of the United States* (New York, 1965); *The Evolution of North America*, by Philip B. King (Princeton, 1959); John Wesley Powell's classic *The Exploration of the Colorado River and Its Canyons* (New York, 1961); the *U.S. Geological Survey Water-Supply Papers*, particularly No. 1733 (Washington, 1964); the records of several Congressional hearings, including *Lower Colorado River Basin Project; Hearings Before the Subcommittee on Interior and Insular Affairs, House of Representatives, Eighty-Ninth Congress on H. R. 4671 and Similar Bills* (Washington, 1966); Francois Leydet's *Time and the River Flowing* (San Francisco, 1964); and my own "Engines in the Wilderness" (*Landscape*, Spring, 1966)



Rock sequence in southern Utah

History, Myth, and the Western Writer
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settled: and sometimes raided for one resource after another, by different breeds of raiders. Despite their colorful history, there has hardly been a *continuous* community life in an Aspen or a Telluride; and when oilfields are superimposed on cattle country in Texas, or subdivisions superimposed on orchards in California, something disruptive has happened in the life of both people and towns. Folklore, more often than not an improvisation on an occupational theme — logging, riverboating, railroading, cowboying — is *only* an improvisation, and though it may be curiously lasting, it lasts as the Western lasts: it is cut loose like a balloon from the actual and continuing lives of men and women.

Few western places can show, even during their short life, the uninterrupted life of a Maine fishing village or a county seat in Indiana or Iowa or a southern town clustered around the courthouse square. Western people have been notably migrant, and much of the West has happened during the age of swift communication, since the invention of the telegraph. Moreover, urbanization, which is as culturally shattering an experience as the frontier itself, has often followed so hot upon settlement that the only constant in western life has been change. Regional patterns that would have developed in isolation were effaced or blurred, half-formed. The living past, having little apparent relevance to the present, became a dead past, sometimes a pool of nostalgia. To the natural let-down of the second and third generation cheated of the hardships and dangers that kept their parents busy has been added the strangeness and unfriendliness and dissatisfaction of ways that have more in common with New York, London, Paris, Vienna, or Prague than with the brief and strenuous annals of the West.

What I have been saying is of course true to some degree of almost the whole of America, but it is particularly true west of the Missouri. Fearing the loss of what little tradition we have, we cling to it hard; we are hooked on history. If the Western continues to exist in a timeless West, carefully landscaped, around Sedona, Arizona and Kanab, Utah — country suitable for "cutting them off at the pass" — western literature of the small-*w* kind is generally scrupulous in sticking to real places and real experience. But it is a literature almost without a Present.

Western writers of fiction have shown a disinclination, perhaps an emotional inability, to write about the contemporary; and when they occasionally do, we are not inclined to think of their books as western. Not one critic in five hundred would designate *Storm* or *A Shooting Star* "western" novels, but *The Oxbow Incident* would make it because it includes cowboys, and *The City of Trembling Leaves* might make it because, though contemporary and urban (Reno) it exploits the scenery of the Sierra and the Nevada desert, and makes a thematic point of its western-ness.

I shall have more to say about the amputated Present in western writing. For the moment, I only want to emphasize that we do save the term "western" — small-*w* — for fiction of a certain kind, a kind not so petrified as the Western, but related to it. It is almost by definition historical and rural, or at least limited to the life characteristic of the periods of raid and settlement, the beginnings of a new civilization. Its actions do cluster around certain large and recurrent themes; its characters, however individually conceived, do illustrate certain tribal qualities, and virtues, and so may be said to emphasize a type. Limited as I have limited it — which I think is the way most of us limit it — western literature does have elements of a large, loose cohesiveness.

Themes recur: nostalgia, for instance, the elegiac

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tone. Henry Nash Smith, Folsom, and other critics have pointed out the debt that much western writing owes to Fenimore Cooper, and in nothing is the debt more apparent than in this lament for the noble and lost, the last of a race or a breed or a kind. Chingachgook, the last of the Mohicans, has a thousand descendants. Some, like Noel Loomis's "Grandfather out of the Past," are as authentically native as Chingachgook himself. But the "last survivor" figures are various. The old prospector in Walter Van Tilburg Clark's "The Wind and the Snow of Winter," the cowhands and hispaños in Rhodes' "Pasó por Aquí," badman Scratchy Wilson in Crane's "The Bride Comes to Yellow Sky," Captain Forrester in Willa Cather's *A Lost Lady*, the wilderness in Guthrie's *The Big Sky*, the sea of grass in Richter's novel of the same name, all are touched with the tone of nostalgic regret. It is a tone that may seem odd in a new country, and yet it may express something quintessentially American: our sadness at what our civilization does to the natural, free, and beautiful, to the noble, the self-reliant, the brave. Many of the virtues of the typical western hero are virtues seen as defeated, gone by, no longer honored.

The regret, in fact, seems almost as compulsive as our need to "break" the wilderness and plant our civilization. Like many other American attitudes, it seems accentuated in the West, perhaps because the West *was* the last home of frontier freedom and largeness, perhaps because as horsemen's country it always had more glamor than clodhopper country, perhaps because in spite of its virile tradition the West itself is fragile — it does not heal readily, the ugliness we create stays visible, bare, and glaring. In a way it is a more honest region than most.

Whenever western fiction does approach the contemporary, the theme of ugliness and vulgarity is likely to show. Willa Cather, in love with the frontier's spaciousness and health, revolted from the villages and towns it had bred: compare *O Pioneers!* with *A Lost Lady* or *One of Ours*. Mari Sandoz, another Nebraskan who always struck me as wishing she had been born a Sioux, did her native state bleakly in *Capital City*, a very different Nebraska from the Niobrara country of *Old Jules*. Bernard DeVoto, putting his home town of Ogden into *The Crooked Mile* and other novels, could find nothing good to say of it, though that same country, when it was prowled by Utes and mountain men, heated his imagination to incandescence. And those are not isolated instances. The typical western writer loves the past, despises the present, of his native region.

In a way, the dichotomy between the past and present is a product of two forces frequently encountered in both western fiction and the Western: the freedom-loving, roving man and the civilizing woman. Given the circumstances of western settlement and the legitimate inclinations of the sexes, it was natural that the West should find this theme strong in its history, and make it into something pervasive in its literature. The bride comes to Yellow Sky and the old male freedom slouches off, defeated, with its bootheels punching funnel-shaped holes in the sand. The schoolmarm comes to Wyoming, and after a suitable interval of male skylarking and lynching, the Virginian wears a collar. An eastern young lady in New Mexico is the person to whom the hispaño speaks of the desert rock on which old passersby have scribbled their elegiac greeting and farewell, "Pasó por Aquí." It is inescapable. Long before I had heard this theme stated, and before I knew enough western literature to state it myself, I had put it into Bo and Elsa Mason in *The Big Rock Candy Mountain*. Almost every writer who has dealt with family stresses on the frontier has found it in his hands, because he probably grew up with it in his own family. Male freedom and aspiration versus female domesticity, wilderness versus civilization, violence and danger versus the safe and tamed. It is in *The Big Sky*, in *Giants in the Earth*, in Vardis Fisher's *Toilers of the Hills*, in a cartridge-belt full of indistinguishable Westerns. Done in almost diagrammatic mythic terms or done as realistic fiction, it is as inextricable from western writing as the theme of color is inextricable from the literature of the South

Allied to it — all these major themes nest and interlock — is the conflict between law as stated in the books and enforced by sheriffs and right as defined by private judgment and enforced by gun, fist, or rope. In practice, the dispute is often but not invariably between fallible book law and the higher moral law. Like the conflict between man-wilderness and woman-civilization, the law theme has an impeccably historical basis, though it is more prominent in stories of mining camps or cowtowns than in those that chronicle the homesteader or sodhouse frontier. The sodhouse frontier was more likely to get its drama out of the location of the county seat or a dispute between landholders — conflicts essentially *within* the structure of established law — than out of lynching bees or walkdowns. Often the woman theme is intertwined

with the law theme, as in that source-book *The Virginian*, in Guthrie's *These Thousand Hills*, in Richter's *Sea of Grass*, in the movie *High Noon*. Sometimes the mythic and lawless patterns are turned upside down, as in *The Oxbow Incident*, where private judgment turns out wrong and innocents are hanged, or in Oakley Hall's *Warlock*, which attempts some corrections in the traditional drawing of gunmen and marshals.

The correctives are needed, for one result of condoning handmade personal justice is to encourage vigilantism; and it is true, as DeVoto pointed out in that essay on Wister, that the Johnson County War looks far more innocent in *The Virginian* than it does to the eye of history. If one assumes that fantasy has no social consequences, then one can take all Westerns and some western literature as harmless ways of discharging the aggressive ego. If one assumes otherwise, then most Westerns and some western books are unconsciously immoral, and perhaps dangerous, in the terms of the civilization that has replaced the frontier.

Immoral or upright, dangerous or merely self-reliant, the protagonist of either kind of western story has heroic virtues, horseback virtues—and that goes whether he is the Virginian or Per Hansa with his feet in a Dakota furrow. Often the structure of a story is created by the testing of the hero, sometimes in one of those walkdown situations between rival gunfighters, sometimes in moral crises where book law has presumably broken down and personal justice must be administered, sometimes in the simple risks and endurances that tell a boy he is a man or reassure a man that he is still one.

Of this last kind are two stories that I like as well as any ever written about the West: H. L. Davis' "Open Winter" and Paul Horgan's "To the Mountains." I have done much the same sort of thing in my story "Genesis," included in *Wolf Willow*, and have discovered something in the process of writing it. Very often this testing of the hero has the quality of an ordeal, and in consequence these stories are generally longer than short stories, shorter than novels: the ordeal must go on a good while to be a true ordeal, but it cannot go on too long or it becomes excruciating. One of the classical examples is the section called "The Crawl," in Frederick Manfred's story of old Hugh Glass, called *Lord Grizzly*. In special and modified terms, Walter Clark's "Hook" is another of those testings of the indomitable spirit, and H. L. Davis' "Homestead Orchard" shows us another boy becoming a man.

The virtues required to survive all these testings are the "manly" virtues of tenacity, courage, the ability to bear pain and hardship, an assured self-trust, generosity, a certain magnanimity of spirit. They do not differ much from the virtues that collectively make up Hemingway's "grace under pressure"; and as Malcolm Cowley has pointed out, Hemingway's virtues are essentially Indian virtues. Western writing is full of them; myth or literature, it is heroic to a degree, and even when fine and honest writers take a hard look at the myths, as Clark does in *The Oxbow Incident* or Milton Lott does in *The Last Hunt*, or A. B. Guthrie does in *The Big Sky*, they do not ever question the validity of heroism.

And that is one of the biggest reasons why to some modern critics the literature we call western seems remote, unreal, uncontemporary, anachronistic, belated. For heroism does not survive into modern literature, or seems not to, and writing which deals with the heroic and the rural seems to have little to say to people whose lives are fully urban and whose minds have grown skeptical or scornful of heroes. At least since Chekhov and Dostoevsky, the main streams of European and American literature have dealt increasingly with victims, not heroes. Look for victims among western stories and you may find them occasionally, as in Crane's "Blue Hotel." "Blue Hotel," beautiful and right as it is, is more "modern" than "western."

The difference in attitude was dramatized by Leslie Fiedler in an essay in which he told of getting off the train at Missoula, Montana, an easterner fresh from the *Partisan Review* offices, and seeing a large, grave, booted, tall-hatted man pass by. The man's face was serene, weathered, and to Fiedler vacant, bemused by an unquestioning faith in what to Fiedler were romantic and untenable fictions. Fiedler records his impression in one line: " 'Healthy!' I thought in contempt."

I want to suggest neither that this "Montana face" was indeed noble and that Fiedler was a diseased New York intellectual, nor that Fiedler was right and the Montana face was a pathetic illusion. I want only to underscore the point I made earlier about the absence of a present in western literature and in the whole tradition we call western. It remains rooted in the historic, the rural, the heroic; it does not take account of time and change. That means that it has no future either, except to come closer and closer to the stereotypes of the mythic, unless it can expand its vision of itself and include things like a Leslie Fiedler lecturing to classes of

undergraduates at the University of Montana.

Nostalgia, however tempting, is not enough. Disgust for the shoddy present is not enough. And forgetting the past entirely is a dehumanizing error. One of the lacks, through all the newly swarming regions of the West, is that millions of westerners, old and new, have no sense of a personal and *possessed* past, no sense of any continuity between the real western past which has been mythicized almost out of recognizability and a real western present that seems as cut-off and pointless as a ride on a merry-go-round that can't be stopped. The heroism of a forming civilization has become a thing to smile at, the civilization a thing to be savagely repudiated. The strenuousness of a hundred western years can be dissolved in strobe lights to the pounding of folk rock that has plenty to do with rock but little to do with folk. You can make the Haight-Ashbury scene in San Francisco, or be a teenage disturber of the peace on the Sunset Strip; you can work in an office in Denver or Dallas, and hear only the strident present, and be persuaded that the past does not exist, that Ford was right when he said history is bunk. But if you are any part of an artist, and a lot of people are some part of one; if you have any desire to understand, and thus to help steer, a civilization that seems to have got away from us, then I think you don't choose between the past and the present; you try to find the connections, you try to make the one serve the other.

No western writer that I know has managed to do it, unless it be Wright Morris in his sequence of novels about Nebraska, and they have a tendency to be hard on both past *and* present. Nobody has quite made a western Yoknapatawpha County or discovered a historical continuity comparable to that which Faulkner traced from Ikkemotubbe the Chickasaw to Montgomery Ward Snopes. Maybe it isn't possible, but I wish someone would try. I might even try myself.

God knows what happens in a future menaced by our incontinent fertility as a species and our incontinent willingness to accept a merely "bearable" world with none of the old western space and elbow room and self-reliance in it. God knows what happens to the heroic virtues when organization and programming have rendered them no longer viable. Maybe we will all sit and watch Westerns on TV, testing ourselves only in fantasy and by standards we no longer think applicable to our real lives. Maybe we will all revolt away from everything we mean and into some "other culture." But I hope we will find ways of recognizing at least parts of ourselves in the literature and history the past has left us, and I hope we will find ways of bringing some of the historic self-reliance and some of the heroic virtues back into our world, which in its way is more dangerous than Comanche country ever was.

I share the nostalgia that I have attributed to most writers of the West. I share their frequent distaste for the uglified and over-engineered and small-spirited civilization that threatens to turn us into one gigantic anthill. But I do not think we can forget the one or turn away from the other. In the old days, in blizzardy weather, we used to tie a string of lariats from house to barn so as to make it from shelter to responsibility and back again. With personal, family, and cultural chores to do, I think we had better rig up such a line between past and present. If we do, the term "western literature" will be enlarged beyond its ordinary limitations, and its accomplishments not so easily overlooked.

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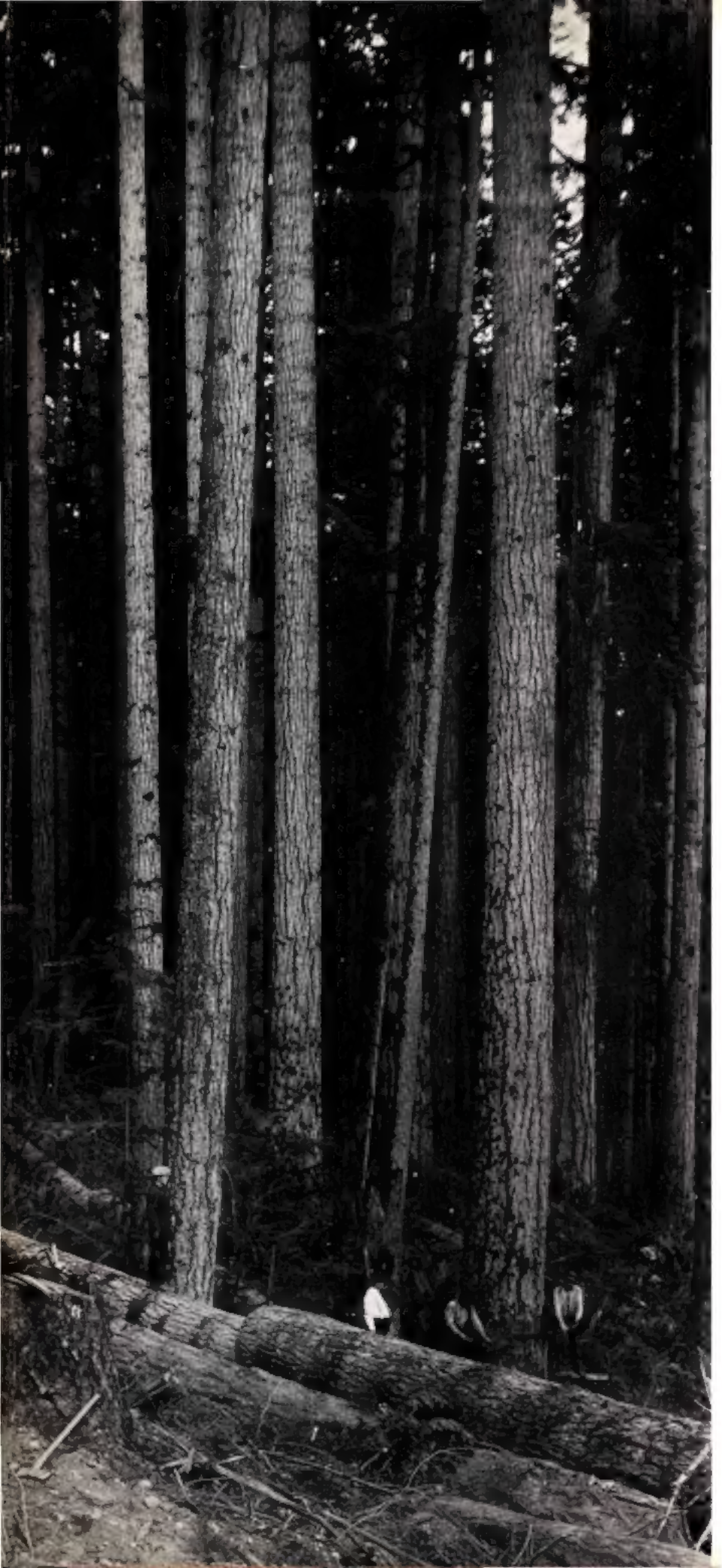

In the Pacific Northwest, about 1900.
—Photograph by Darius Kinsey
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